

1922.



City and County of Bristol.
PORT OF BRISTOL.

ANNUAL REPORT
OF THE
Medical Officer of Health

INCLUDING

Special Report on Tuberculosis.

Report of the Tuberculosis Officer.

Report of the Maternity and Infant
Welfare Medical Officer.

Report of the Resident Medical Officer.

Ham Green Hospital and Sanatorium

and

Report of Port Medical Officers of
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CITY OF BRISTOL.

HEALTH DEPARTMENT.

Retrospect for 1922.

Births.

During the year 1922, 7,649 births were registered, corresponding to an annual rate of 19.92 per 1,000 population, compared with a rate for 1921 of 22.03, for 1920, of 25.6, and for 1919, of 18.4. (The rate would be better calculated, not on population, but as a rate per 1,000 women living at child-bearing ages (15—45).

The birth-rate, which for the decade 1880-89, was 31.4, steadily declined year by year to a minimum in 1918 of 16.1. A similar decline during the last 40 years has been noted in most civilised countries.

The causes of decline in the birth-rate are chiefly four:—

- (1) Deliberate birth control.
- (2) Postponement of age of marriage.
- (3) Increasing celibacy due to cost of living and employment difficulty.
- (4) Absence of men from country on war service.

The social bearings of high and low birth-rates and infant mortality rates may be summarised thus:—

- (1) A high birth-rate with many surviving children will in time cause industrial overcrowding.
- (2) A high birth-rate with high infant mortality rate is simply deplorable.
- (3) A low birth-rate with few survivors is equally undesirable.
- (4) A low rate with many survivors may possibly mean the solution of many social difficulties.

A vast population, more than a country can support, needs Colonial outlet, or means starvation, and this condition in Germany may have been one direct cause of the War. Colonies need sea-control and command of the Channel Ports. On the other hand, the development of a country may be delayed owing to lowness of birth-rate. A happy mean is desirable.*

Infant Mortality.

The Infant Mortality Rate per 1,000 births for 1922, was 74.1*², compared with a rate for 1921 of 67.8 and for 1920, of 70.4. The rate for the decade 1890-99 was 147.5, with a birth-rate of 29.0, and the infant mortality rate did not show notable decline until 1907, when it fell to 100.9. In 1910 the rate was

* Hewlett & Nankivell—Principles of Preventive Medicine, 1912.

* ²This figure, as corrected by the Registrar-General for transferable deaths from or to outside districts, gives the yet lower figure of 71 (see p. 7).

90.3, but again rose in 1911 (a remarkably warm summer) to 142.8. Since 1915 it has only exceeded 100 in one year, 1917, when it was 102.0. The early summer of 1921, when the infant mortality was at its lowest, was remarkable for its warmth and continuous drought.

One chief factor in infant mortality is the infant diarrhoeal mortality accompanying continued high temperatures in the late summer and autumn. Thus a comparison of the three summer months—July, August and September—in the years 1911, 1921 and 1922 may prove instructive, the first year being one of excessive infant mortality while the last two were record low years.

1911—July, August, September.

July. Phenomenal sunshine and heat: a dust storm on 29th. Rainfall very slight. 0.09 inches at Clifton of which 0.07 fell on 26th. The average for the month is 2.9 inches.

Mean temperature 66.7° —over 4.5° above average and 7° above July, 1910. Maximum 91° on 29th.

Mean barometric pressure at 9 a.m. 30.173 inches—much above average.

August. Half an inch of rain fell in the first six days, then drought returned together with abnormal heat: slight rainfall at close of month.

Mean temperature 66.7° —being 5.7° excess over average and 6.4° above August, 1910.

Maximum 90° on 13th, with a mean temperature of 75° .

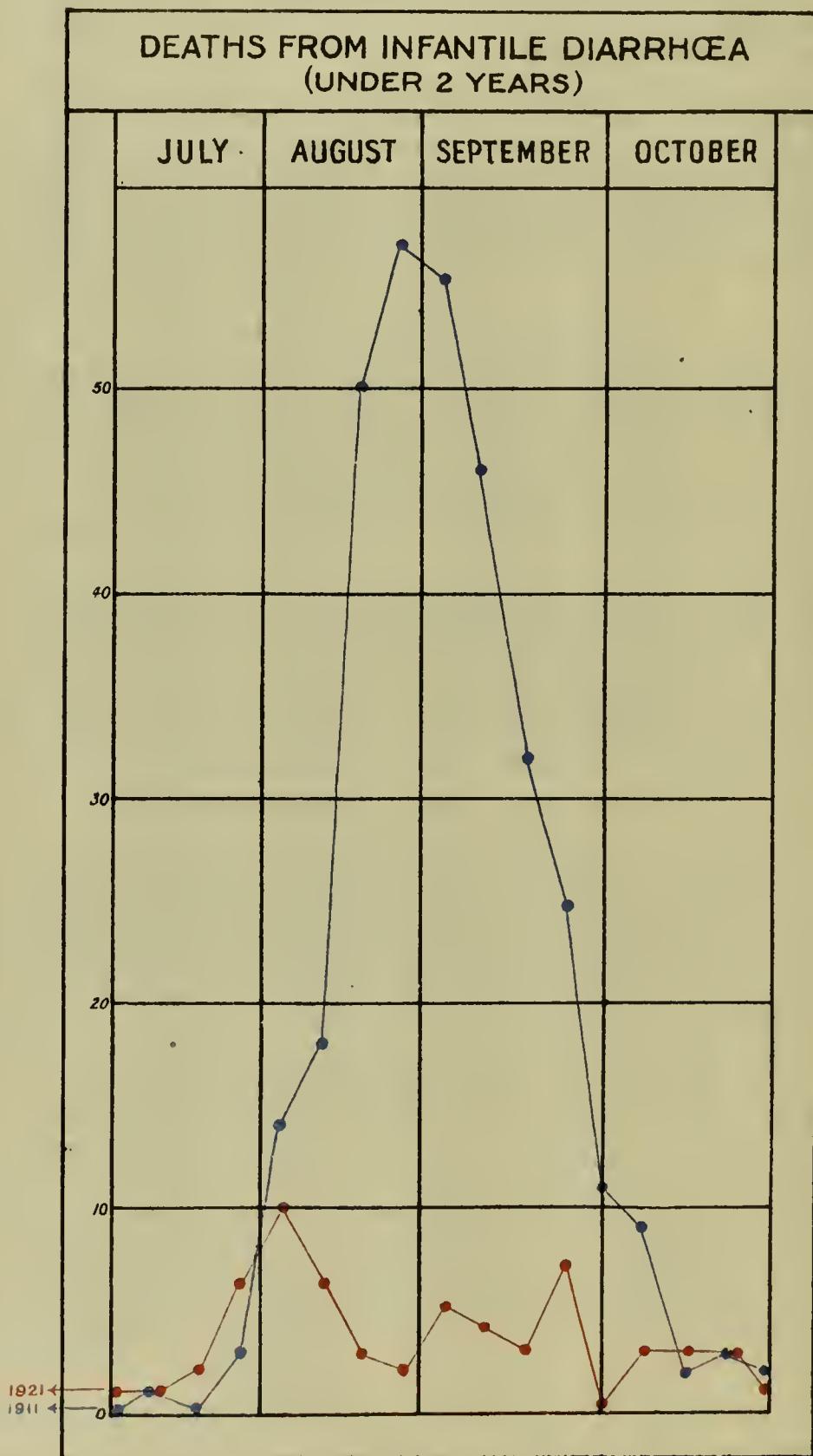
Mean barometric pressure above normal—30.005 inches at 9 a.m.

September. The extreme heat continued up to 8th September, when the unprecedented maximum for the late season of 90° in the shade was reached. On the 9th, a shift of wind from S. to N.E. brought the thermometer down to below 70° then three warm days were succeeded by heavy rainfall and a temperature below the average.

Mean temperature 59.4—two degrees above average.

Total rainfall 1.61 inches at Clifton. Barometric pressure 30.081 inches at 9 a.m.

The continuance of abnormal heat through August and early September was closely accompanied by excessive infant diarrhoeal mortality, thus :



July, August, September, 1921.

A year of considerable drought but small Infant mortality.

July. First week normally fine and warm—from 8th to 13th the day temperatures exceeded 85° daily, reaching nearly to 90° with no rainfall, thence onward the weather was unsettled, with sparse rainfall and continuous temperature above normal.

The mean temperature for the month was 67.1°, which is 5° in excess of the average, the previously recorded hottest summers being July, 1876 and 1911, with a mean temperature of 66.7°. The extremes recorded were 89.7° on the 13th, and 45° on the 2nd, the warmest day the 18th, with a mean of 75.2° and the coldest the 27th with a mean of 59.7°. The total rainfall was 0.87 ins. at Clifton, falling on 10 days—heaviest falls 0.24 ins. on 22nd and 0.21 ins. on the 14th. Departure from average 2 ins. Mean barometric readings at 9 a.m. 30.058 ins.

August. Unsettled weather through the month. Mean temperature 61°, slightly below normal, extreme readings 79.6° on 1st, and 34.2° on 31st.

Rainfall 3.26 inches at Clifton, falling upon 17 days. Mean barometric pressure, 29.933 inches a little below normal.

September. Opened with showery weather, but from 4th to 9th brilliant sunshine—followed by a period of heavy rain, over 3 inches falling on 10th, 11th and 12th. Unsettled weather and a gale on 16th, followed by rainless period to end of month.

Mean temperature 57.4°, slightly above normal—maximum 82.7° on 8th, minimum 33.7° on 29th, warmest day 14th, mean of 65.5°.

Rainfall 4.29 inches at Clifton falling on eight days only, heaviest fall 1.80 inches on 11th. Mean pressure at 9 a.m. 30.130 inches well above the average.

NOTE.—The extremely hot weather of July was not continued through August, and the infant diarrhoeal mortality was remarkably low. (See Chart).

July, August, September, 1922.

Mean Temperature. The mean temperature for the 12 months shows a decided deficiency, and is over 3 degrees below that of 1921. Apart from the three winter months and May, every month was cold—April, July and August most unusually so. Practically all the summer experienced was confined within the period May 20th to June 12th, during which time the temperature exceeded 70° on 19 occasions and 80° upon two, whereas, throughout the whole of the remainder of the season it only reached or slightly exceeded 70° upon seven days.

June was a hot month to begin with, but soon became cooler, though practically no rain fell before the 21st, but after this the weather became continuously inclement—cold

and wet through July and August. September was on the whole dry, though decidedly deficient in temperature, and this type of conditions persisted through the Autumn. The total rainfall of the year exceeded the average (locally) by about 2 inches.

Again the climatic conditions in late summer and autumn favoured a low infant diarrhoeal mortality.

(Meteorological particulars kindly furnished by Mr. A. H. Harding).

There is a natural temptation to claim a lessened infant mortality in towns where Infant Welfare work has been instituted, as due entirely to municipal endeavour, a claim actually made in 1907 in a certain town, with a record of 28 per cent. fall in infant mortality below the previous ten years' record; but on examination it was found that in Bristol, a 26 per cent. reduction had similarly occurred without any machinery for infant welfare work, as the first School for Mothers (a voluntary one) was not established until November, 1909, and municipal work did not commence till 1912. Other towns also shared in notable reduction in infant mortality, which is much influenced by climatic and other conditions not under municipal control.

It is unsafe, therefore, to accept more than the conclusion arrived at by the Medico-Sociological Committee of the British Medical Association (June, 1921, par. 18), that: "Maternity and Child Welfare work has contributed in an appreciable degree to the reduction of infant mortality that has taken place, but it is too early to determine to what extent it has been effective."

Death Rate.

The recorded Death Rate for 1922 (uncorrected for age and sex distribution) is 13.26*, compared with 11.4 in 1921, 12.6 in 1920, 13.1 in 1919, and 17.2 in 1918 (Influenza year).

This rate is calculated on a population of 383,900, estimated to mid-year, 1922.

When we find that, at the date of Clark's Report, 1850, the average general death rate over a period of 7 years was 27, in the 'seventies averaged about 21, in the 'eighties from 16 to 19, and has fallen steadily to the present time, there would seem to be reason for congratulation. So there is, and the gradual and continuous improvements form an index no doubt of the social betterment in domestic conditions, of the influence of the "New Humanity" continued from the eighteenth century and fostered by Lord Shaftesbury and others, in regard especially to conditions of employment, of the provision of the prime necessities for decent communal existence, un-

* The adjusted comparative figure as given by the Registrar-General, is 12.8 (see p. 7).

polluted water and efficient removal of waste matters, supplemented by supervision of things possibly harmful, and, more important, by some supervision of persons, and aided by some rudimentary development of a "Sanitary conscience" in the individual.

Under these influences general morbidity and mortality would be likely to decline from general diseases, as well as from that small group of intestinal communicable diseases exemplified by Cholera and Typhoid, which are directly amenable to "sanitary" influence as generally understood. "Sanitary" endeavour alone has probably done all that it can towards control of disease, it must be maintained, but other more direct means founded on knowledge of the etiology of individual diseases are necessary.

The most fatal of the communicable diseases are shown in these figures for the ten years 1904-1913, none of which bear any direct relation to insanitary conditions:—

Deaths.

Measles ...	...	1,034
Whooping Cough		884
Diphtheria ...		600
Scarlet Fever ...		196
Smallpox ...		13

2,727 total in 10 years or 272 in a year.

Now, in a population of the size of Bristol, it takes 383 deaths in a year to increase the general death rate by one, so that this constant wastage passes unnoticed.

Assuming the mortality in these cases to be 10 per cent., that means a total in ten years of 27,270 cases. The majority recover, but only too often with some permanent injury to health.

Bearing these facts in mind, it becomes a moot point whether the recurrence of record low death rates,* tending to produce undue complacency, is in the interest of survivors; especially of those who have but recently been piloted through their infant risks.

The efficient safeguards are Hospital accommodation, an adequate medical staff for enquiry into home, school or institution infectious sickness before the development of an epidemic, and time and opportunity for continuous pathological investigation and research, none of which are fully available.

* COMPARATIVE RATES.

	Death Rates				Infant Mortality Rate			
	1919	1920	1921	1922	1919	1920	1921	1922
Birmingham	13.6	12.6	11.2	11.9	88	83	82	85
Liverpool	16.8	15.7	14.3	14.5	107	111	105	94
Manchester	14.0	13.0	13.6	14.0	95	94	94	94
Sheffield	13.7	13.2	12.5	11.6	96	104	98	81
Leeds	16.0	14.3	13.5	13.7	112	105	96	97
Bristol	13.1	11.7	11.0	12.8	82	69	66	71

(*Registrar General*).

Hospital Accommodation.

The deficiency in Hospital accommodation, and its failure to increase commensurately with the increase in population, has been noted for some years, and in 1914 suitable extensions were authorised by the City Council and approved by the Local Government Board, but were deferred owing to the War. In the meantime, expenditure in relation to Tuberculosis, Infant Welfare and Venereal Disease has risen so enormously that progress in other directions is checked, and at the same time a campaign has been started decrying the value of Isolation Hospitals. Many of the criticisms err in dealing with communicable diseases as a whole, whereas they differ one from another so materially in causation and methods of spread, that the relative value of Hospital Isolation varies for each form of disease. For example, there can be no question that isolation is imperative for preventing spread of Smallpox, while in Diphtheria, this end, though also served, is perhaps secondary to the advantage in life saving of specialised medical service and of necessary operative relief immediately at hand. Scarlet Fever has proved disappointing to the ingenuous aspirations of the 'seventies, but isolation in this disease, as in Measles coming from overcrowded houses, means not only saving of life but avoidance of the evolution of septic types of disease. Isolation Hospitals are erected out of the rates, not to save trouble to householders who have means of isolation at hand, but to protect the public by isolation where this is impossible owing to home conditions. It is the judicious use of a reasonable amount of hospital room, rather than the indiscriminate use of a superabundance of beds, that is of public health value.

The position in regard to Hospital accommodation which, in place of the approved 1 bed per 1,000, does not afford more than 240 beds in all for a population of 383,900 people, has been emphasised on several occasions during the present century, and has caused considerable anxiety and grave difficulty in 1902-3-4, during a concurrent outbreak of Scarlet fever and measles, in 1913 with scarlet fever, and again during 1921 and 1922, when, in the absence of Clift House as a reserve, the Sanatorium Blocks have had to be pressed into service. Some projected hospital extensions were approved by the Council in 1914, when the War intervened, and no further progress has been made. Since the War urgent Government intervention on behalf of Sanatorium Benefit, Infant Welfare Work and Venereal Disease control has held the field, absorbed the expenditure, and shouldered aside the basic necessity for hospital accommodation and control of communicable fevers.

During 1921, the Guardians, with whom there is an agreement to take infectious fevers, obliged by nursing 104 cases for which room could not be found in the City Hospitals, and the voluntary General Hospitals also during the year

nursed 98 cases of infectious disease for which also provision should properly be made in the Municipal Isolation Hospitals. As these institutions are now considering the question of charges for in-patient accommodation, difficulties may arise in securing isolation.

CAUSES OF SICKNESS.

Small Pox.

No case of smallpox was reported during the year, the last introduction, limited to 7 cases, occurred in December—January 1920-21, and involved dislocation of the Sanatorium work at Novers Hill. One severe and fatal case occurred in an unvaccinated boy, whose sister, vaccinated to qualify for a baby show, passed unscathed through the ordeal of a week's exposure to infection. As smallpox is somewhat widely distributed in England, its introduction during 1923 is not improbable.

In 1903, under similar conditions, it was introduced into Bristol on 15 separate occasions, but was in no instance allowed to assume epidemic proportions.

Scarlet Fever.

The notifications and deaths by quarters numbered :—

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Notifications ...	423	446	433	550	1852
Deaths ...	7	1	4	6	18

The disease was of a mild type, but if unsuitably circumstanced cases are not removed to hospital, home-overcrowding and consequent spread may result in development of septic complications and heightened mortality.

Inadequate Hospital accommodation prevented the removal of many urgent cases, and from March to May two of the huttied Sanatorium Blocks (O and P) were taken over for scarlet fever, while in December Block P was again requisitioned. The type of disease is now becoming more severe, and there is reason to anticipate considerable prevalence during the winter (epidemic season) of 1923.

Measles

Deaths :—

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
36	22	3	1	62

The last prevalence of measles was in the first and second quarters of 1918, when 207 deaths occurred, and, as this disease recurs with fair regularity every 3 or 4 years, it is over due; available Hospital provision for urgent cases will save life.

The disease was notifiable from 1915 to the end of 1919, when notification was discontinued, so that we must again rely upon information from medical practitioners, home nurses and others as to cases urgently requiring attention, preferably to be given in hospital when hospital room becomes available.

Whooping Cough.

Deaths :—

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
13	4	5	8	30

Infantile Diarrhoea.

The small number of deaths from this disease through the summer is noteworthy, and in large part accounts for the very low infant mortality. As a rule, extreme heat in the late summer and early autumn is accompanied by a considerable diarrhoeal mortality : the summer was not marked by extreme heat, and was fairly wet.

Deaths under 2 years of age :—

	1911	1913	1921	1922
August ...	194	40	16	6
September ...	124	48	14	12
	318	88	30	18

Bronchitis and Pneumonia.

These diseases amongst children under 1 year of age assist materially in raising the infant mortality rate, when inclement weather conditions prevail during the two winter quarters. A concurrent cold spring and hot August-September will thus bring about a high infant mortality rate ; the main factor is, however, summer diarrhoea. The average number of deaths in the two winter quarters for 15 years past is 93.7. More than 100 deaths were registered from bronchitis and pneumonia in infants in 1907-8, 1908-9, 1911-12, 1914-15, 1916-17 and 1918-19.

The effect of fatal intercurrent epidemics, such as measles must also be taken into account as adding to the infant mortality.

Diphtheria.

The notifications and deaths for the year were :—

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
1922 { Cases	391	179	137	179}	886
Deaths	31	16	15	12}	74
compared with					
1921 { Cases	335	227	337	614	1513
Deaths	17	13	22	55	107

In 1902, the deaths from diphtheria numbered 189.

Arrangements are made for protection of the hospital staff, as authorised by the Committee (Schick method).*

The two Huttied Sanatorium Blocks (O. P.) recently provided at Ham Green were again taken over for acute diphtheria until the end of February when these Blocks were required for scarlet fever.

* Early in 1922 the whole of the Ham Green Nursing and Domestic Staff (135) were tested, and the positives (33) duly protected with T.A.T. Each new entrant is similarly protected before undertaking the nursing of Diphtheria cases.

Enteric Fever.

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Notifications	7	10	7	7	31
Deaths	...	—	1	—	1

This disease, one of the few dependent directly on " insanitary " conditions, is practically under control.

February—March, 1923.

STATE OF NEW JERSEY.

A Typhoid carrier is fined.—A suit recently brought by the State Department of Health in the First District Court of Newark against a typhoid carrier for violation of Regulation 37, Chapter vi, of the State Sanitary Code resulted in a judgment of \$100.00 and costs rendered against the carrier. Regulation 37 provides that " no person affected with any communicable disease which may be transmitted through food, or who is a carrier of a causative agent of any such disease, shall handle food products intended for sale or distribution, which are likely to be consumed raw or liable to convey infective material."

Malaria.

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Notifications	8	3	5	22	38
Deaths	...	1	—	—	1

As the anopheles mosquito, the " porter " of malaria, is not extinct in England, the Ministry is keeping a constant watch against the introduction of virulent types of malaria from abroad.

Encephalitis Lethargica.

This newly-recognised disease was much in evidence in Bristol during 1919-20-21, when the Ministry instructed a special inquiry into its prevalence.* It continued in some excess over the first quarter of 1921 (45 cases—12 deaths), and thereafter subsided.

1922	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Cases	...	3	2	1	2
Deaths	...	1	1	—	2

* Reports on Public Health and Medical subjects.

No. 11. ENCEPHALITIS LETHARGICA—Dr. Allan C. Parsons
Ministry of Health, 1922. 10/- net.

" The most striking exception to the general rule is provided by Bristol, whose aggregate of 108 cases during the period from 1st January, 1919, to 30th September, 1921, is nearly double that of Birmingham, though its population is scarcely half that of the Midland town.

The case of Bristol, indeed, is apparently unique, for during each of the last three years it has occupied the premier position among the large towns (other than London), both as regards incidence and attack rate. The first case to be reported occurred on 18th December, 1918, and others occurred during the first five months of 1919; thereafter the seasonal incidence for Bristol has followed very closely that observed in the country as a whole. The majority of the cases have occurred in the more thickly populated parts of the city, and notably in the St. George, St. Philip and Bedminster sub-districts. During a local investigation made in the Autumn of 1920, a curious grouping of cases in the Barton Hill locality was pointed out by the Medical Officer of Health for the City; a large number of the cases occurred among households, one or more of whose inmates were employed at various large factories in the district, but it was found that no particular significance could be attached to these circumstances. Since 1920 the Barton Hill district has remained practically free of cases, but in Bedminster the disease appears to be maintaining its hold; this sub-district, too, contains a curious little partly-hidden street in which three different houses were involved, and where it seemed probable that the disease had proved personally contagious.

The following figures show the incidence in the various sub-districts of the city during 1921.

Sub-District.	Population. (approximate)	Number of Cases, Jan. 1st-Dec. 23rd. 1921.
Bedminster	61,000	15
St. George	58,000	10
Ashley	48,000	10
St. Philip	48,000	5
Clifton	40,000	2
Central	35,000	3
Stapleton	27,000	5
Knowle	22,000	6
Westbury-on-Trym	13,000	2
Outside City	—	2

When forwarding these statistics, Dr. Davies adds: "An interesting point to note is that the St. Philip's Marsh district, which is a thickly-populated working-class district, where we constantly look for scarlet fever, measles, diphtheria or small-pox, has remained during these two years (1920 and 1921) absolutely free from encephalitis lethargica. This district is all on low-lying ground—a great deal of it made from ash-tips, &c.—along the Feeder Canal."

If, now, the epidemiological features displayed by encephalitis lethargica during the last three years in Bristol be compared with those exhibited by the disease in this country as

a whole, it will be found that, far from being singular, Bristol is, in this matter, quite orthodox on most points, and its records of encephalitis lethargica reflect fairly accurately the behaviour of the disease generally throughout England and Wales.

Thus :

	<i>Bristol.</i>	<i>England and Wales as whole.</i>
Prevalence	Attack rate per 1,000 =0.0298.	Attack rate per 1,000 =0.02
Local distribution.	Chiefly in thickly-populated areas.	
Seasonal incidence.	The incidence charts are very similar ; the summer rise of 1920, as well as the marked outburst in the winter of 1920-21, are both reflected by the experiences of Bristol.	
Sex.	No difference ; a total of 96 cases was exactly divided between males and females.	Both sexes equally affected.
Age.	Most susceptible age 10-30 ; 24 per cent. of these attacked were between ages of 10 and 20.	Most susceptible age 10-20 ; 25 per cent. of cases fall into this age period.
Occupation, social status, and hygienic conditions.	Of no aetiological significance.	
Instances of infection following recent contact with an acute case.	1 in 100 (approx.)	1.2 in 100 (approx.)
Mortality.	1919 and 1920 combined. 1921 as far as is known.	47.7
		48.3 per cent.
		38.0 per cent.

We may, perhaps, be allowed to suggest here that the well-sustained vigilance on the part of the City Health Authorities and the constant co-operation between them and many keen clinical observers in Bristol, have possibly accounted in part for the many cases of encephalitis lethargica notified from that City."

Influenzal Pneumonia and Acute Primary Pneumonia.

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total
Notifications ...	301	96	46	85	528

This disease is personal and is most readily acquired in crowded assemblies. A serious outbreak developed early in 1922.

HOME NURSES AND THEIR WORK.

When the appointment of Home Nurses was first authorised under the Maternity and Child Welfare Act, 1918 (*vide* paras. 19, 22, Circular M. & C.W. 4), the Health Committee appointed three for these special duties in February, 1919.

Home Nurses for infectious diseases may be appointed under the Amendment Act of 1907, under the special Regulations for Influenza, Pneumonia, Malaria, Dysentery, etc., or specifically, as was done in this case, under the provisions of the Maternity and Child Welfare Act, 1918, in which case a grant is available for the nursing of puerperal fever, and the nursing of measles, whooping cough, polio-myelitis, and epidemic diarrhoea in young children (par. 19), and the Circular further urges in par. 21: "It is particularly important that all cases of measles notified from districts in which deaths from the disease are likely to occur, should be visited."

A Local Authority may, with consent of the Ministry, themselves appoint Nurses for the purpose specified, as has been done in Bristol (par. 21). The expression "young children" in these Acts appears to connote children under five years of age.

On appointment the Home Nurses were put on duty in regard to a prevalent measles epidemic, and on this subsiding, they were lent for routine Health Visiting duty, as suggested by the Ministry (para. 21), M. & C.W. 4. Soon after, in 1921, measles again became urgent, and later not only measles but virulent and widespread diphtheria having become prevalent, they were employed as Home Nurses for cases of diphtheria, which, in addition to the usual enquiries, needs skilled nursing advice as well as attention by douching and spraying of contacts in the affected house, work for which the male Inspector is totally unsuited.

The results, as shown in the immediate subsidence of the epidemic, were so immediate and remarkable that I had no hesitation in completing the improvement in methods by including scarlet fever in their list of duties.

The Diphtheria Experience.

The epidemic commenced in the thickly-populated district of Bedminster in September, 1921, and continued increasing through October, November and December, when it reached its highest point. At this juncture we were able to put the Home Nurses on to the work of enquiry, advice, and contact-following.

On taking up the work they found the habit of neighbourly visiting by mothers, who were more often than not accompanied by a baby in arms and other small children to see the patient, a very prevalent habit.

People in general do not grasp that diphtheria and such-like diseases live in the patient and are caught directly from the patient: they have the mistaken notion that if the drains and sink are all right, there is no danger, so they have to be patiently taught, and this can only effectively be done by a trained nurse who has the confidence of the mother, and who can go into more intimate detail than is possible for a male Inspector.

Immediate abatement of the epidemic took place, and has been maintained for more than a year. I feel justified in this instance in assuming that *post hoc* is *propter hoc*. This success implies great saving of life.

No disparagement of the work of the Inspectors is made, they performed their duties as well as any men were able, but with children's diseases, as is well recognised by the Ministry, the carrying of nursing aid and instruction to the mothers in the houses is clearly indicated.

Under the new system for Disinfection, personal supervision is no longer called for from the District Inspector, so that there is less demand upon his time than there was when he made the preliminary enquiries and also personally supervised the disinfection.

From a Return prepared by the Chief Inspector I find that during the period from July, 1922, to March, 1923, 2146 notified cases have been entered up on the Inspectors' sheets for disinfection, and 2347 visits have been paid, or little more than one visit each case—which can be accounted for by insanitary conditions found by Home Nurses on their visit of enquiry and referred to the Chief Inspector for amendment, also by occasional visits for special enquiry in delayed school attendance, etc.

Since January, 1923, all primary visits in Tuberculosis cases, previously paid by Inspectors, are now paid by the Tuberculosis Nurses, leaving only the quarterly revisits (except to discharged soldiers and sailors) to be paid. The quarterly revisits average about 160 per week, or 11.4 in each district.

This development of Home Nursing service in suppression of disease and saving of life, has been fully reported to the Ministry.

A spot map showing the nature and extent of the work covered by only three Home Nurses, and a Diphtheria Chart, have been supplied to the Ministry, showing the immediate response of the epidemic to this helpful improvement in procedure, the only improvement of prime importance in basic Public Health work that it has been possible to secure since the war.

HOUSING.

The Housing Inspector shows in his Report (page 48 the progress of work during the year, and some of the difficulties met with.

No real solution of the Housing difficulty will be found until circumstances permit the unrestricted re-establishment of private endeavour, so that supply may follow demand.

ECONOMY.

Any inflation of municipal expenditure, especially since the war, on "Health" measures is due, not to any increase in expenditure on the basic work involved, as determined up to 1910 by the Local Government Board, but to the imposition upon the Health Committee since that date of fresh compulsory statutory duties necessitating large and costly trained medical and lay staffs, and already accounting for half of the total expenditure of the Department. While provision is made for the appointment of the large staffs to execute the detail work enjoined by Orders, no provision is made for the necessary co-ordination and control, which falls upon the unassisted shoulders of the original Medical Officer.

The position grows more exacting day by day in City and Port, and uniform success in epidemic control and the persistence of low rates have hitherto obscured the fact that medical control over the multifarious activities of the Department is inadequate.

No increase in expenditure on the original Medical Service has taken place for 30 years, during which time the population has practically doubled and the area quadrupled. And during the War, the Medical Services proved an asset, the liability being limited to increase of official responsibility.

D. S. DAVIES, M.D., LL.D., D.P.H., etc.,

Medical Officer of Health, City and County and Port of Bristol ; Administrative Med. Supt. City Hospitals ; Lecturer in Charge of Public Health, University of Bristol, and Internal Examiner to the University ; sometime Examiner to the Universities of London, Cardiff and Belfast, and to the Conjoint Board ; late Medical Inspector to H.M. Loc. Govt. Bd. on Cholera Survey and General Sanitary Survey of England ; Surgeon-Col. 1st Glos. R.G.A. (V.), retd. V.D. Lt.-Col. R.A.M.C. (T.), retd., etc.

CITY OF BRISTOL, YEAR 1922.

1. GENERAL STATISTICS.

Area (acres)—18,445.

Population (1922)—383,900.

Number of inhabited houses (1922)—75,000 approximately.

Rateable Value—£1,926,063 18s. 9d.

II. EXTRACTS FROM VITAL STATISTICS OF THE YEAR.

Births :—		Total.	M.	F.	Birth Rate,
Legitimate	...	7,366	3,780	3,586	
Illegitimate	...	283	142	141	19.92.*
		—	—	—	
		7,649	3,922	3,727	

Deaths—5,091. Death Rate, 13.26.*

Number of women dying in, or in consequence of childbirth :—
From Sepsis, 8 ; from other causes, 14.

Deaths of Infants under 1 year of age per 1,000 births, 74.13.*
Legitimate, 534. Illegitimate, 33. Total, 567.

Deaths from Measles (all ages) 62.

Deaths from Whooping Cough (all ages) 30.

Deaths from Diarrhoea (under 2 years of age) 52.

* For Registrar General's corrected figures see next page.

Birth-rate, Death-rate, and Analysis of Mortality during the Year 1922.

(Provisional figures. Populations estimated to the middle of 1921 have been used for the purposes of this Table. The mortality rates refer to the whole population as regards England and Wales, but only to civilians as regards London and the groups of towns.)

		ANNUAL DEATH-RATE PER 1000 LIVING.							RATE PER 1,000 BIRTHS.		PERCENTAGE OF TOTAL DEATHS.						
BIRTH-RATE PER 1,000 TOTAL POPULATION		All Causes.	Knethic Fever.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria	Influenza	Violence.	Deaths in Institutions	Certified Deaths.	Uncertified Deaths.					
England and Wales	...	20.6	12.9	0.01	0.00	0.15	0.04	0.16	0.11	0.54	0.44	6.2	77	25.6	92.7	6.2	1.1
105 County Boroughs and Great Towns, including London	...	21.4	13.0	0.01	0.00	0.22	0.05	0.19	0.13	0.56	0.41	7.6	82	32.9	92.6	6.7	0.7
155 Smaller Towns (1921 Adjusted Populations 20,000—50,000)	...	20.5	11.7	0.01	0.00	0.10	0.03	0.15	0.09	0.58	0.35	5.6	75	16.9	93.6	5.1	1.3
London	...	21.0	13.4	0.01	0.00	0.35	0.07	0.25	0.25	0.57	0.45	7.1	74	48.7	92.1	7.8	0.1
Bristol	...	20.1	12.8	0.00	0.00	0.16	0.04	0.08	0.19	0.23	0.23	5.4	71				

CITY OF BRISTOL.

Cases of Infectious Disease notified during the Year 1922.

"P"-Port cases.

CITY OF BRISTOL.

INFANT MORTALITY during the Year 1922.

Deaths from stated Causes in Weeks and Months under One Year of Age.

CITY OF BRISTOL.

Causes of, and Ages at, Death during the Year 1922.

CITY RATES

No. of Births.	Birth Rate.	Death Rate.			Principal Epidemic Diseases (Zymotic Rate)	Infantile Rate
		This Year.	Last Year.	10 Years' Average		
M. 3922	P. 3727	20.04	12.1	14.41	13.99	6
7649						74.13

Deaths of Infants under 1	36	100	80	48	15	111	88	39	19	2	29	...
	M. 314 F. 321	M. 618 F. 594	M. .715 F. 739	M. 432 F. 420	M. 145 F. 148	M. 646 F. 563	M. 591 F. 548	M. 229 F. 235	M. 150 F. 131	M. 32 F. 28	...	...
Number of Births	635	1262	1454	852	293	1209	1139	464	281	60	..	...

Average age at Death of persons aged 65 and upwards...75 years 10 months.
 Births of Illegitimate Children ... (Males 142 Females 141)-10
 Total Deaths " under 5 (" 28 " 15)-43
 Inquests " " " " " 416

TUBERCULOSIS.

The City Council, acting on the recommendation of the Health Committee, took into consideration the light thrown by modern workers on the natural history of Tuberculosis in modern civilised communities, and provided, in their scheme adopted in 1920, not only for Sanatorium and Hospital treatment of chronic pulmonary phthisis (Consumption) but also for such glandular and surgical manifestations as distinguish this disease in childhood. This scheme is unfortunately delayed by the economy campaign. The Memorandum, drawn up principally for the information of the Health Committee, and, through the courtesy of the Editor, printed in the *Bristol Medico-Chirurgical Journal* in December, 1920, is here reproduced :—

TUBERCULOSIS.

Tuberculosis in its various forms is the commonest of all the important diseases of civilised lands. It accounts for some 50,000 deaths a year in England and Wales ; that is to say, about one death in every ten is due to tuberculosis.

The popular idea is that a young adult who develops pulmonary consumption has of necessity *recently* been infected by a relative, a companion, or a fellow-workman, just as happens in the case of scarlet fever, and much of the machinery in connection with "Sanatorium Benefit" seems to be frankly based on this assumption.

In considering the question of prevention it must be remembered that in the majority of civilised communities tuberculosis is as widely distributed and as constantly prevalent as the "common cold." Despite the fact that the new-born infant is practically always free from infection, hardly anyone who has attained the age of 14 has escaped.

Distinction between Tuberculosis and Consumption.

The distinguishing peculiarity about childhood infection is that as a general rule between the ages of 3 and 12 it does not manifest itself as consumption of the lungs, but may consist in a comparatively trivial affection of certain glands, prone to heal without further trouble, or in other cases may lead to more serious bone or joint or abdominal trouble, still curable if properly and early taken in hand. These *non-pulmonary* forms of tuberculosis, though they may prove fatal, are far less so than either the acute forms of generalised tuberculosis, which are terribly fatal during the first two years of life, or than the chronic pulmonary forms with destruction of lung tissue (consumption) which after the age of puberty cause most of the deaths from tuberculosis.

An important point about the practically universal childhood infection is that the severity of the case appears to depend, other things being equal, largely upon the "dose" received. If the dose is quite small (minimal dose) the disease is often so benign that it passes unnoticed, though it has already started the immunity-producing response of the individual, but it may end in a latent tuberculosis (the bacilli still

alive but enclosed) of one or more glands. This bacillary infection with tuberculosis (tuberculisation), not "consumption," is compatible in the great majority of subjects with every appearance of health, and the presence of the enclosed bacilli appears to maintain the "immunity," which may be heightened by repeated minimal doses. This difference between "tuberculisation" and "consumption" is very important to bear in mind.

"Immunity" in Tuberculosis.—Childhood infection may thus confer a relative but not absolute form of immunity. It affords fairly complete protection against acute, rapidly fatal forms in later life, but not complete protection against slower chronic forms (consumption) which, while the patient is often well capable of holding his own, are yet sufficiently fatal; and these chronic patients are long standing and potent disseminators of infection.

The comparative mildness of these chronic forms, against which many patients can maintain a winning fight for some years, is believed to be due to the partial immunity conferred by repeated minimal doses of tubercle in childhood. Hence, Fishberg considers the occurrence of such mild forms to be "evidence of immunity." Hence, also, it is of some advantage to be immunised in childhood.

These points already suggest very forcibly that it is too late if we concentrate only on even the earliest manifestations of chronic pulmonary phthisis (consumption); infection of another sort has already occurred years before. We must devote equal care to curing the slighter and benign manifestations in childhood in the hope that the maximum of possible "immunity" may be attained upon clinical recovery. However, adults as well as children must be protected against exposure to "massive" infection, and against all depressing and predisposing causes, and if affected, then treatment with a view to cure must be taken in hand early. The anti-tuberculosis crusade must therefore be vigorously prosecuted against tuberculosis at all ages.

Sources of Infection.—The infection of tuberculosis may be received from other people, or from the cow through its milk. Generally speaking, the human source of infection is four times as important, even towards children, while chronic pulmonary phthisis (consumption) is practically always due to infection of human source. A large share of human tuberculosis is apparently acquired during childhood from relatives under the intimate conditions of family life, the disease thus acquired not manifesting itself clinically (as consumption) for ten or twenty years afterwards, therein resembling the tertiary manifestations, after long latency, of syphilis.

Influence of "Insanitary" Conditions.—While it is correct to look upon overcrowding in cities or in rooms, bad ventilation, absence of sunlight, underfeeding, mental anxiety, and "insanitary" conditions or insanitary habits generally as powerful predisposing causes helping towards the wide

diffusion and persistence of the disease, the essential factors are the persons or animals actually suffering, who distribute the infective germs. "Family" infection is a far greater danger, and leads to greater risks of "massive" infection, than does "bovine" infection. But although tuberculosis derived from the cow appears to be responsible for only 6 per cent. of the total deaths from tuberculosis, yet as this means 3,000 deaths in a year out of a total of some 50,000, it is of distinct importance; and it is inadmissible to contend that as bovine infection often leads to benign attacks, which appear to be protective, this source of risk may be neglected, for, as there is no control over the dose received through cows' milk, it may lead to serious and prolonged illness. When a "vaccine," under control as to dosage and strength has been secured, the era of true prevention in tuberculosis will dawn.

Every reasonable precaution should be taken to secure a milk supply as free from tubercle as possible, though even if this source of infection were entirely removed the far larger "human" risk still remains.

Housing.—It is somewhat the fashion to say "tuberculosis is a question of housing." This seems to be an exaggeration, and hardly a useful one, as it tends to confusion between actual and predisposing causes, and distracts attention from the plain duty of exhausting or rendering harmless the actual sources of infection.

"No child will be found, were it condemned to live in the most unhealthy hovel under the most terrible conditions of want, nor any calf in the most insalubrious stable—which will contract tuberculosis, if in that hovel or in that stable virulent germs are not introduced, either intermittently or continually, by men or animals who are sick" with tubercle. (Calmette).

Similarly alcoholism, poverty, malnutrition, unhealthy dwellings will not make a man tuberculous where the bacillus does not exist. But once the bacillus is present, these conditions paralyse or thwart the efforts of the natural defensive weapons, that is to say, act as most powerful predisposing causes. Therefore drastic action to remove such conditions, and especially to check overcrowding, and to secure adequate provision of fresh air, forms a necessary background to any scheme for the control of tuberculosis.

The Decline in Consumption.—The remarkable decline in the mortality recorded from "consumption" from 1840 to the end of the century, during which time the figures fell from 475 to 130, can hardly be due to any special measures taken, since it began and continued before any administrative action was commenced towards control, and while administrative action has increased, the rate of decline shows signs of diminishing. The bills of mortality for London over a period of 200 years suggest that it is probably part of a declining wave of long duration, assisted possibly by improved

economic conditions during the Victorian period ; but this wave may show a future tendency to rise.

Natural Selection in Disease.—Independently of this decline, however, there is evidence that civilised communities, amongst whom the disease is constantly present, do enjoy a comparative immunity when compared with "virgin" populations (*i.e.* populations amongst whom the disease is newly introduced) as evidenced by a less mortality. Individuals vary in resistance to certain diseases, and under the constant weeding-out by the ever-present disease of the less resistant, though absolute immunity is not secured, *the mean resistance of a race towards the particular disease is raised*. This is true of malaria in West Africa, and much the same result seems to have occurred amongst civilisations where tubercle is endemic. For example, in 1917-18 the average strength of the British troops (from a country where the disease is endemic) in France was over a million and a half, but there were only 2,881 cases of tuberculosis, with 165 deaths, or about 1 death in 9,000. In the same period the average strength of Cape Boys and Kaffirs (from a country free from the disease) was only about 11,000, but the deaths from tuberculosis numbered 182, or about 16 deaths in every 1,000, which would amount to 144 deaths in 9,000. The Fijian labour unit had to be repatriated on account of tuberculosis.

It is highly probable that high or low powers of resistance are transmitted by inheritance, and this point deserves more serious attention than it has hitherto received, in particular the mating of highly susceptible couples should in every way be discouraged. Heredity is important in the whole field of etiology, and becomes specially important in phthisis, because that disease is one of the largest factors of the death rate.

Protection due to Minimal Attacks.—The second kind of racial immunity due to the continued and universal presence of the disease is not dependent on natural selection, but is believed to be due to minimal cured or latent infections during the less susceptible childhood period.

This process of immunisation by minimal doses appears to be a normal phenomenon during the progress of many communicable diseases, amongst persons constantly exposed to the infection.* (epidemic of immunity).

* Compare the acquisition of immunity amongst 1,000 boys at a School during a diphtheria epidemic :—

" Many boys acquired antitoxin rapidly without any clinical or bacteriological evidence of diphtheria infection, but they only acquired this immunity when there were plenty of chances of receiving diphtherial infection."

Commander DUDLEY, R.N.,

*Med. Research Council, Special Rept. Series,
No. 75. "The Schick Test, Diphtheria and
Scarlet Fever."—p. 225.*

The Risk to Infancy.—Available evidence tends to show that infection in infancy is usually accomplished within the family. Tuberculosis is extremely rare in infants who live in homes where there is no tuberculous member, whatever the condition of the home.

Though the child will probably be born tubercle-free, there is great risk to infants suckled by a phthisical mother, especially if in an advanced stage. The infant is apparently not infected through the mother's milk, but by the bacilli she scatters in coughing or speaking. Similarly other tuberculous persons coming into contact with a nursling are a source of danger.

Up to the present public attention has been mainly focused on sanatorium benefit, of which the outstanding features are as follows :—

- (a) Segregation of so-called *early cases* of pulmonary phthisis (consumption) in sanatoria.
- (b) Segregation of advanced or "late" cases in hospital (acute cases).
- (c) Tuberculosis dispensary or out-patient work, with searching out and supervision of contacts.
- (d) Provision for domiciliary or home treatment.

Consideration for the care of the childhood manifestations of tuberculosis has in general taken a secondary place.

The would-be best friends of the sanatorium, claiming impossible results, have unwittingly been its worst enemies, for there has been no marked failure within the limits of the possible influence of such methods, which have in fact been directed only against certain late manifestations of a long-standing infection. Many years of added useful life may have been obtained for a large number of individuals who respond to treatment, and for whom suitable after-care or suitable employment can be found, though much remains to be secured in this direction.

The sanatorium and its after-care complement, useful and necessary as they are, form but a small part of a complete scheme for the control of tuberculosis, which is a far wider question than merely dealing with chronic pulmonary phthisis (consumption).

Increasing attention, interrupted by the war, is now properly being given to searching out and making adequate provision for the glandular and non-pulmonary tuberculous affections of children of school age, and this necessary provision comprises :—

1. Open-air schools.
2. Sanatoria for "pre-tuberculous" cases in children (glandular cases, etc.)
3. Provision for dealing with the more serious cases of surgical tuberculosis, bone and joint affections and spinal cases in special hospitals.

Not only are these conditions more curable, and up to a point *probably protective in after-life*, but if neglected may result in serious and crippling deformity.

There is every need, therefore, to push forward this important work, not in place of sanatoria for consumption, but as the necessary and indispensable antecedent.

SUMMARY.

(a) Tuberculosis is so universally present, and the opportunities for infection are so frequent in most civilised communities, that, though born free, practically no one escapes infection of some sort by the tubercle bacillus. By the age of 14 over 80 per cent. are infected.

(b) Infection by the tubercle bacillus does not always result in obvious illness. Under 3 years of age infection will probably result in acute and fatal illness. Between 3 and 12 infection, if in moderate dose, will probably result in a mild glandular affection, readily curable, and acting as some protection against further infection; if the dose is large, however, serious bone or joint trouble may result. If not cured to sterilisation, the patient becomes a "carrier," liable to re-infect himself under adverse conditions of life, when the disease assumes a chronic form. If cured to sterilisation, however, the partial immunity may not persist.

(c) Consumption (chronic pulmonary phthisis), which is rare at school ages, is met with more frequently in later life. It is a chronic form of lung disease, milder than acute tuberculosis, and in most instances appears to be due, not to recent infection, but to a re-awakening of previous childhood infection which was not absolutely cured. It only occurs in persons previously "immunised." If such a patient had not previously been partly protected by childhood infection an acute, rapidly-fatal tuberculosis would probably occur, and in unprotected populations infection results in very heavy mortality from rapid generalised tuberculosis.

(d) Of the sources of infection the "human" source is by far the most dangerous, but infection from the cow, though generally milder, is responsible for some amount of disease; and as the "dosage" is not under control (except through the uncertain safeguard of "mixed" milk from large herds, most of which are presumably healthy), safeguards are necessary.

(e) Infants are peculiarly susceptible to "home" infection where parents or relatives are affected. "Sanitary conditions" do not exert their full depressing influence until past middle age.

(f) Consumptives do not appear to be a great source of danger to other adults, who are probably to some extent protected, but they are a constant danger to and the chief source of infection towards children in the home circle. While it may be admitted that early slight infection may produce resistant individuals, such persons require guarding against "massive" infection, and against depressing pre-disposing causes, lest they re-infect themselves.

(g) The possibility, or even the advantage (if possible) of completely banishing tuberculosis from civilised communities, is doubtful. For its more complete limitation some means of controlled tuberculisation is apparently necessary in addition to the measures hitherto available.

The necessary Institutional Provision in a Scheme for dealing with Tuberculosis.—A comprehensive scheme for tuberculosis involves the following considerations:—

A. Preliminary Considerations.

1. The question of the health of parents is distinctly important, and the mating of definite consumptives should be discouraged in every way.
2. Consumptive mothers should not suckle their infants, and other consumptives in the home or family are a special danger to infants, who, though born free from tuberculosis, are most ready to contract it in fatal form.

B. Institutional Provision.

(*Full Scheme delayed through Economy Campaign*).

Bristol Sanatoria and Hospital provision.

		Beds	Total Beds
3.	Provision for "pre-tuberculous" conditions in children, comprising open-air schools and special sanatoria (malnutrition, glandular* affections)	35	100
4.	Provision in special hospitals for bone and joint affections (surgical tuberculosis) in children ...	20†	60
5.	Provision for surgical aid in adult cases	6	6
6.	Provision for other non-pulmonary forms of tuberculosis (genito-urinary cases, etc.)	—	12
<i>Pulmonary Tuberculosis.</i>			
7.	Sanatoria for "early" cases ...	110	110
8.	Hospitals for "late" cases ...	84	84
9.	Dispensaries (Portland Square and Redcliffe Parade)	—	—
10.	Continuation after-care farm colonies, etc.	—	Committee formed 1922
Total		255	372

* By "pulmonary tuberculosis" is here meant that form which produces actual destructive changes in the lung-tissue: "Hilus" tuberculosis is classed as "non-pulmonary."

† This is the number of cases at present actually under treatment at Alton, Heatherwood, and the Bristol Orthopaedic Hospital.

Provision is included under B.3 for the somewhat rare cases in children of school age, of whom some few are apt to develop acute pulmonary phthisis, indicating either an unfavourable variation from the mean resistance, or a mean resistance overbalanced by excessive dosage.

APPENDIX A.

Table A. *Tuberculosis in Relation to Age.*
(In a community having the tubercle bacillus ever present).

Morbidity (sickness).	Nature of affection at different ages.	Fatality (deaths).
The new-born infant is practically always free from tuberculosis.	During the first year of life the membranes of the brain and lining membrane of the abdomen are largely affected.	<i>Infancy.</i> In the first year of life tuberculosis is very fatal, especially from 6th to 12th month. About 80 per cent die of those attacked.
During the first year of life about 15 per cent.	During the first two years of life acute miliary tuberculosis (a generalised and rapidly fatal form) and tuberculosis of bones, joints, and glands are common.	<i>Childhood.</i> The school ages period (5-15) is the period when deaths from tuberculosis are least frequent, though "infection" of some sort is most frequent.
During the first five years about 50 per cent.	Between the ages of 2 and 10 the milder forms of bone, joint, and gland tuberculosis are mostly found. At these ages chronic pulmonary tuberculosis (phthisis or consumption) is very rare.	<i>Adolescence, Middle Life, and Old Age.</i> After the 15th year the mortality from tuberculosis, chiefly "consumption", increases, rapidly at first, afterwards more slowly. The maximum mortality occurs between 35 and 55, then falling slowly.*
By the age of 14 about 80 per cent.	After the age of 10 "phthisis" begins to prevail, and after 15 becomes the chief form of disease.	
After 30 practically everyone has been infected in some form, once at least.		

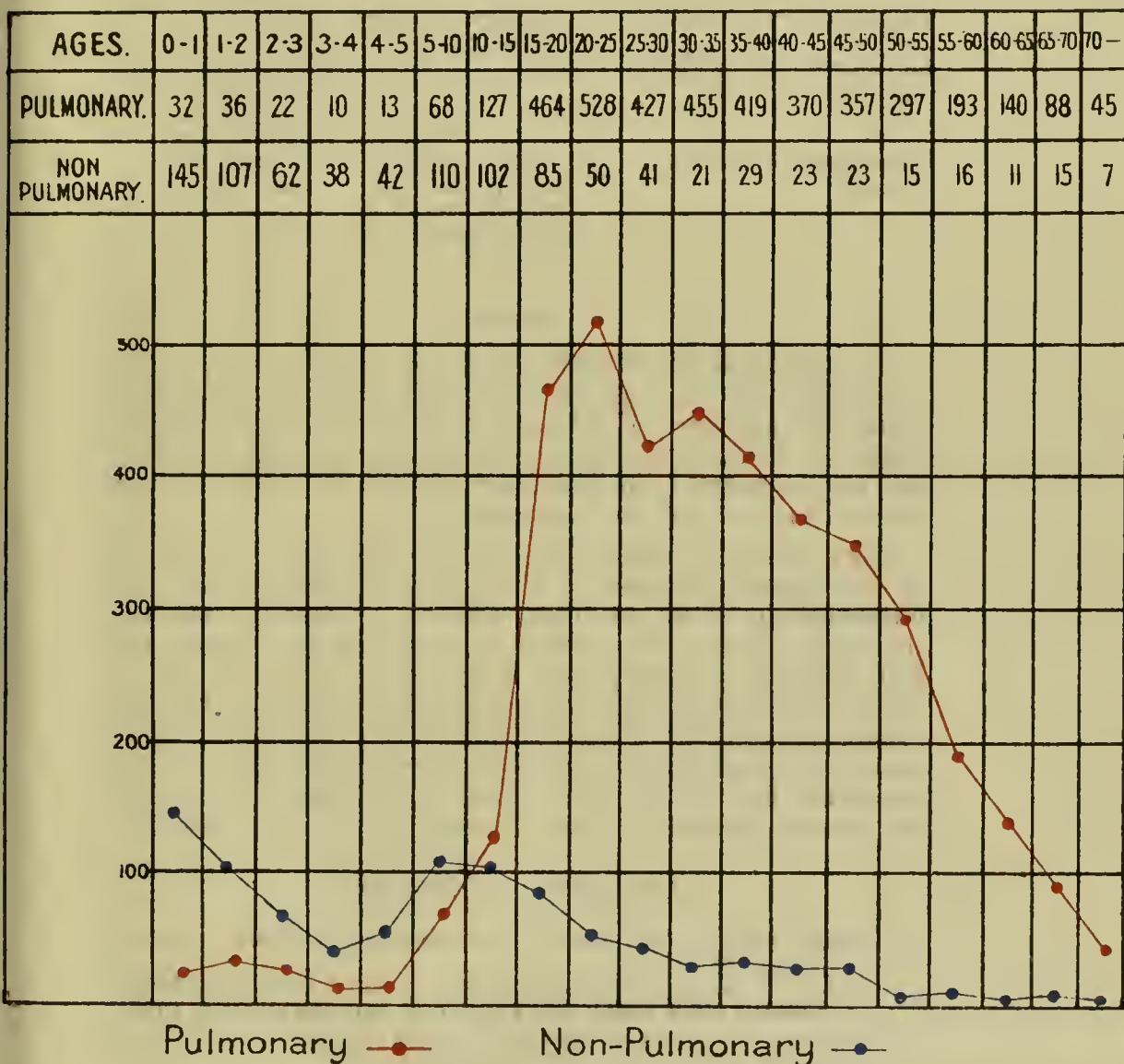
* Brownlee differentiates three types of phthisis ("consumption") :—

1. The young adult type—commonest age at death, 20-25.
2. The middle age type " " 45-55 (in males).
3. The old age type " " 55-65

APPENDIX B.

This chart shows in graphic form the deaths, classified by ages, from pulmonary phthisis (consumption) and from other forms of tuberculosis, for the ten years 1913 to 1922 inclusive, in the City of Bristol. The special prevalence of the "young adult" type at present in the city is clearly indicated.

**PULMONARY & NON-PULMONARY TUBERCULOSIS
DEATHS FOR YEARS 1913-1922**



APPENDIX C.

Table showing Causation-Ratio of Bovine to Human Tuberculosis (Cobbett).

	Human.	Bovine.
Pulmonary tuberculosis.	Practically always.	1.7 per cent. (Griffiths).
Tuberculous meningitis.	82 per cent.	18 per cent.
General tuberculosis. (without meningitis).	84 per cent.	16 per cent.
Primary abdominal tuber- culous affection.	49 per cent.	51 per cent. (none amongst adults).
Tuberculosis of bronchial glands.	In the great majority of cases human.	
Tuberculosis of cervical glands.		Under 16 years of age 55.5 per cent. for England, 71.4 per cent. for Scotland. Edinburgh & neigh- bourhood appear to form an excep- tion.
Tuberculosis of bones and joints.	In most countries largely due to tubercle bacilli of human origin.	

Notes.

In Edinburgh tuberculosis of bovine origin is apparently particularly rife. Comparing Edinburgh with Vienna, McNeill found the incidence of *tuberculosis in children up to 4 years* higher in Edinburgh, which is suggestive of milk infection, but the mortality from *pulmonary phthisis* in Vienna is three times as high as that for Edinburgh.

The human and bovine type of bacillus are probably varieties of one species adapted to different environment, but this differentiation is by no means absolute. Generally speaking, the bovine type is less virulent to man than the human type. But although the bovine type is extremely rare in the chronic adult pulmonary phthisis (consumption) of man, it is relatively common in glandular or acute infections in children. At the same time Calmette points out that tuberculosis is very common in children in countries where bovine tuberculosis does not exist, and where children are never brought up on cows' milk.

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1922.

TUBERCULOSIS.

CASES NOTIFIED.

Age Periods	... 0—1	1—5	5—10	10—15	15—20	20—25	25—30	30—35	35—40	40—45	45—50	50—55	55—60	60—65	65 & up.	Total
Pulmonary. Males ...	2	4	25	16	35	59	101	70	52	25	25	7	396			
Pulmonary. Females ...	3	9	22	33	39	70	130	67	33	14	14	8	428			
Total Pulmonary Cases	5	13	47	49	74	129	231	137	85	39	39	15	824			
Non-Pulmonary. Males	12	29	26	19	13	2	4	4	4	5	5	2	1	117		
Non-Pulmonary. Females	4	29	32	18	16	12	6	2	5	2	2	2	2	128		
Total Non-Pulmonary Cases	16	58	58	37	29	14	10	6	10	6	10	4	3	245		
Total Pulmonary and Non-Pulmonary Cases ...	21	71	105	86	103	143	241	143	95	43	43	18	18	1069		

BRISTOL MUNICIPAL TUBERCULOSIS DISPENSARIES.

19 Portland Square.

4 Redcliffe Parade West.

1922.

Total patients treated 3,749.

Total Attendances, 24,687.

Total number of re-examinations, 2,783.

New Cases Examined.

Pulmonary Tuberculosis 556 (304 Insured, 252 Non-insured)

Stigmata and other

forms of Tuberculosis 280 (13 „ 267 „)

Observation at Dispensary

sary ... 101 (52 „ 49 „)

Non-Tuberculous 480 (112 „ 368 „)

Total ... 1,417 (481 „ 936 „)

Total attendances of School Children 8,546

X-Ray examinations 532

Sputum examinations 1,042

Total injections 2,641

Artificial Pneumothorax 91

No. of visits (domiciliary) by Tuberculosis Officers ... 809

No. of visits to Patients by Tuberculosis Nurses ... 8,270

C. J. CAMPBELL FAILL, M.R.C.P., Ed.,
*Tuberculosis Officer.*L. HEARN, M.B., B.S. Durh.,
Assistant Tuberculosis Officer.

TUBERCULOSIS.

Sanatorium Benefit (1922).

At the end of the War the Council had provided 50 beds at Winsley for early cases of pulmonary phthisis and 52 beds at Ham Green; also Hospital provision for late cases, 20 beds at Ham Green and 21 beds at Clift House. During the past year the Committee again took up the question of non-pulmonary tuberculosis and surgical tuberculosis, delayed by the war. At Novers Hill, 36 cases of early tuberculosis conditions in children were admitted until November, 1920, when they were transferred to Snowden House, where 18 children were temporarily accommodated until October, 1921, on which date the Institution was closed and the patients transferred to Frenchay Park Sanatorium.

Clift House Hospital, accommodating 21 advanced cases, was closed in September, 1921, and the patients transferred to Ham Green Sanatorium, where the 52 additional beds for advanced cases were in occupation until November, when 26 were taken over for acute Diphtheria cases to supplement the insufficient accommodation at the Fever Hospital, and the remaining 26 beds were also required for Diphtheria in January, 1922.

In May the two Sanatorium Blocks (52 beds) at Ham Green—given over to Diphtheria in November, 1921, and January, 1922,—again reverted to the nursing of Phthisis.

In November, 1922, however, to meet the pressure of Scarlet Fever, it again became necessary to take over one Female Block of 26 beds.

At the end of December admissions to Frenchay Park were stopped owing to a minor outbreak of Scarlet Fever at that Institution, and early in 1923 Chicken Pox also contributed to the “hold-up” of admissions.

Sanatoria available for In-Patient Treatment, 1922.

No. of Beds.	ADMITTED.			DISCHARGED.			DIED.			TRANSFERRED.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
EARLY CASES.												
Winsley Sanatorium, 'Nr. Bath. (Beds retained by payment to Winsley Board of Management) ...	58	125	72	197	120	71	191	—	1	1	2	3
Ham Green Sanatorium, Pill, near Bristol (On adjacent site to Isolation Hospital) ...	52	76	74	150								5
ADVANCED CASES.												
Ham Green Tuberculosis Hospital (On adjacent site at Ham Green)	72	73	74	147	109	126	235	31	24	55	6	—
Ham Green Red Cross Hospital (For Soldiers and Sailors) ...	12											6
PRE-TUBERCULAR CHILDREN.												
*Frenchay Park Sanatorium, Frenchay, near Bristol ...	35	52	70	125	44	57	101	1	—	1	2	5
SURGICAL CASES.												
Cossham Hospital, Kingswood, Bristol (6 beds retained by payment of maintenance charges) ...	6	7	7	14	7	2	9	1	—	1	1	3
Lord Mayor Treloar Cripples' Hospital, Alton, Hants (patients sent in by arrangement by payment of maintenance charges) ...	—	5	4	9	3	2	5	—	—	—	—	4
Orthopaedic Hospital, Redland, Bristol (patients sent in by arrangement on payment of maintenance charges) ...	—	2	3	5	—	—	—	—	—	—	—	—

* This is the number of cases at present nursed in Frenchay Sanatorium, but it is hoped to bring the accommodation up to 50, as circumstances permit.

During the year the following cases were also admitted to various outside Institutions:—

	M.	F.	T.
Royal National Sanatorium, Bournemouth	2	—	2
Shropshire Orthopædic Hospital	—	1	1
Preston Hall Sanatorium and Training Colony, Kent	5	—	5
St. Michael's Home, Axbridge, Somerset	4	1	5
Glan Ely Tuberculosis Hospital, Cardiff	—	1	1
King George's Sanatorium, Bramshott, Hants.	1	—	1
Total	12	3	15

The Council has approved of an arrangement for the provision of 60 beds for surgical tuberculosis in children, at Lord Mayor Treloar Cripples' Home at Alton and Hayling Island, and for 100 beds at Frenchay; both these schemes have been delayed by the Ministry on the plea of economy. Six beds have been provided at Cosham Hospital for special adult surgical cases needing operative interference, and children will be admitted for surgical treatment to the Orthopædic Hospital.

There are now 194 adult beds for consumption, in addition to Frenchay for children, and the Committee feel assured that a very large amount of beneficial work will be secured as soon as full facilities are available for dealing with the early manifestations of Tuberculosis in childhood, upon which so much rests in the preventive treatment of this endemic disease.

MATERNITY AND CHILD WELFARE.

Report for year 1922.

General Statistics.

Midwives in private practice	...	...	67
Midwives attached to Institutions, Homes, etc.	...	...	47
Total	...	114	
Live births notified	...	...	7,590
Stillbirths	„	...	253
Total	...	7,843	
Notified by Doctors	...	...	1,358
„ „ Midwives	...	...	5,460
„ „ Relatives	...	...	1,025

Home visits by Health Visiting Staff :—

First visits	...	...	6,461
Revisits	...	...	58,055
Stillbirths	...	...	218
Ante-Natal	...	...	653
Other purposes	...	...	15,233

Total visits ... 80,620

No. of records transferred to School

Medical Officer	...	...	3,277
Total milk grants	...	...	5,898
Eye cases other than Ophthalmia			
Neonatorum	...	...	548
Vision unimpaired	...	...	541
Death before recovery	...	...	3
Result not known	...	...	4

Total attendance at Ante-Natal Clinics (5) :—

New patients	...	...	1,046
Old patients	...	...	4,574
Post-Natal	...	...	397
		Total	...

6,017

Attendance at Moorfields Infant Clinic :—

New patients	...	...	749
Old patients	...	...	707
		Total	...

1,456

School for Mothers. (20)

No. of women on books	...	...	2,169
,, infants under 1 year	...	...	1,123
,, „ over 1 year	...	...	1,648

Midwives.—Employment of, or subsidy to, practising midwives by public health authority.

An arrangement made in 1919, guaranteeing a minimum income to a midwife in the district of Avonmouth and Shirehampton, has now been formally cancelled, as the midwife is well established.

OPHTHALMIA NEONATORUM.

Ophthalmia Neonatorum	Cases				Vision Unimpaired	Vision Impaired	Total Blindness	Deaths	Result not known
	Notified	Treated at Home	Treated at Hospital	In-pt. 14					
119	119	29	In-pt. 14	Out-pt. 76	111	4	Nil	2	2

Clinics and Treatment Centres.
MUNICIPAL ANTE-NATAL CLINICS.

<i>Clinic.</i>	<i>Address.</i>	<i>Open.</i>
Bedminster	62 West Street	Every Thursday, 10.30 a.m.
North Bristol	Brookland Inst., Lower Ashley Rd.	Every Tuesday & Wednesday, 10.30 a.m.
Redcliffe	90 Redcliffe Hill	Every Friday, 10.30 a.m.
St. Augustine's	89 St. George's Rd., Hotwells	Every Tuesday, 10.30 a.m.
University Settlement	63 Barton Hill Road	Every Friday, 10.30 a.m.

MUNICIPAL INFANT CLINIC.

<i>Clinic.</i>	<i>Address.</i>	<i>Open.</i>
Moorfields	38 Chapter Street, Dean Lane, Moor- fields	Every Tuesday, 10.30 a.m.

Voluntary Schools for Mothers and Societies affiliated to the Bristol Infant Welfare Association and Council of School for Mothers.

SCHOOLS FOR MOTHERS AND INFANT CONSULTATION CENTRES.

<i>School or Centre.</i>	<i>Address.</i>	<i>Open.</i>	<i>Remarks.</i>
Barton Hill (University Settlement)	63 Barton Hill Road	Tues. and Wed. 2.15—4.15 p.m.	
Bedminster	62 West Street, Bedminster	Mon. & Thurs. 2—4.30 p.m. Wednesdays, Thrift Sewing Class 2.30—4.30 p.m. Citizen Club Wed. even. Nursery open, 3 p.m.	
Knowle and Brislington	United Methodist Church Hall, Oxford Street, Totterdown	Fridays, 2.30—4 p.m.	
Broad Plain	Girls' Club, 5 Broad Plain, St. Philip	Fridays, 2.30—4 p.m.	

<i>School or Centre.</i>	<i>Address.</i>	<i>Open.</i>	<i>Remarks.</i>
Durdham Down	Mission House, Granby Hill, Durdham Down	Thursdays, 2.45 p.m.	
Eastville	St. Thomas' Parish Hall, Eastville	Wednesdays and Thursdays, 2.30—4 p.m.	
Hotwells	12 Dowry Sq.	Wednesdays and Thursdays 2.15 p.m.	
Horfield	Horfield Baptist Schools, Brynland Av., Bishopston	Tuesdays, 2.30—4.30 p.m.	
Kingsdown	St. Matthew's Hall, Cotham Rd. South	Wednesdays, 2.30—4.30 p.m.	
Kingswood	Wesleyan Old Schoolrooms, Black Horse Rd., Kings- wood Hill	Wednesdays, 2.30 p.m.	Situated in county dis- trict near City bound- ary
North Bristol	Brookland Inst., Lower Ashley Road	Tuesdays and Fridays, 2.30—4.30 p.m.	
Moorfields (University Settlement)	38 Chapter St., Dean Lane, Moorfields	Fri. 2.15—4 p.m. Alternate Mondays, 2.45—4.15 p.m.	
Redcliffe	90 Redcliffe Hill	Tues. 2—4 p.m.	
Shirehampton (University Settlement)	Settlement Cottage, Kingsweston	Thursdays, 2.30—4.30 p.m.	
St. August- ine's	89-91 St. George's Rd.	Tuesdays, 2.30—4.15 p.m.	
St. Lawrence	St. Lawrence Church House, Leadhouse Rd., Lawrence Hill	Thursdays, 2.30—4 p.m.	
St. James' and District	10 Montague St., St. James'	Tuesdays, 2.30 p.m.	
St. Paul's	St. Paul's Mission House, Dean Lane	Tuesdays, 2.30—4 p.m.	
Temple	The Parish Hall, Church Lane, Temple	Thursdays, 2.30—4 p.m.	
Westbury	College House, Westbury-on-Trym	Wednesdays, 2.30—4 p.m.	

DAY NURSERIES.

<i>School or Centre.</i>	<i>Address.</i>	<i>Open.</i>	<i>Remarks.</i>
Bristol	27 North St., Stokes Croft	7.30 a.m. to 7 p.m. daily except Sats. & Suns.	
Hotwells	12 Dowry Square	8 a.m.—6 p.m.	

Hospitals provided or subsidised by the Local Authority.

The Maternity Hospital, Brunswick Square.

Opened February, 1921. In order to prevent closure, owing to financial embarrassment, the Town Council has arranged to purchase these premises and lease them to the Voluntary Committee which originally acquired the buildings, but the purchase is not yet completed.

Provides 17 beds for married women only, including one isolation room.

Any Institutional provision for unmarried mothers, illegitimate infants and homeless children in the district.

Homes for Unmarried mothers and babies.

Grove House, 148 Redland Road	...	12 beds and cots.
Bristol Maternity Hospital, Southwell Street	...	24 "
Salvation Army Home, 89 Ashley Road	18	" "
Guardians' Institutions.		

Home for Homeless Babies.

Ashley House, Somerset Street, Kingsdown. 30 cots.
Guardians' Institutions.

JOHN C. HEAVEN, L.R.C.P., M.R.C.S., D.P.H.
M.O. i/c,
Maternity and Child Welfare Department.

D. S. DAVIES, M.D.,
Medical Officer of Health.

HOSPITALS PROVIDED OR SUBSIDISED BY THE BRISTOL CORPORATION.

Infectious Disease Hospitals (available for Bristol Area) :—

Ham Green (within City) for Fevers, Measles, etc. (about 200 beds); Nover's Hill (within City) for Smallpox (or as a relief Hospital for Scarlet Fever) 30 beds.

Ham Green Hospital

Admissions and Discharges during 1922.

	Remaining in Hospital end of 1921	Admissions as Notified	Recovered	Died	Mortality Case Rate per cent	Remaining in Hospital end of 1922
Scarlet Fever	0	722	602	5	0.8	94
Diphtheria	195	751	640	49	7.6	74
Enteric Fever	1	13	9	0	-	0
Mixed infections and other diseases and observation cases	19	33	241	13	5.4	7
	215	1519	1492	67	4.4	175

Scarlet Fever.

Although this disease again showed a favourable mortality (0.8 per cent.), the cases towards the end of the year included a much higher proportion of prolonged and severe attacks than usual during the past ten years.

Serious complications (in particular Mastoiditis requiring operation 2.0 per cent., and severe nephritis 1.0 per cent.) were more frequent than usual. It may be that the disease is again about to become a dangerous one as has happened previously.

Diphtheria.

The mortality from this disease is lower than last year (7 per cent.), and the proportion of very virulent cases is diminishing, although the disease is still more virulent than the type before 1921.

Schick Test.

The whole of the staff has been tested (the earlier cases in collaboration with Dr. J. Nixon) and as far as possible no new member is allowed to come into contact with diphtheria cases until tested and immunised.

124 were negative, 77 positive—or 33 per cent. Five members of the nursing staff contracted diphtheria. Three of these showed positive tests and developed the disease before

or during immunisation. Two were regarded as negatives or borderland reactions. One of these cases had nursed diphtheria for many years. She had a clinical follicular tonsillitis with a positive diphtheria swab, and may be regarded a tonsillitis in a possible carrier. The other case gave a borderland reaction, but was finally counted as negative. She developed a slight but typical attack of diphtheria after three months' contact with the disease.

Fifteen members of the staff contracted scarlet fever; of these, five gave negative Schick tests and ten positive. This rather suggests that the positive Schick cases are more susceptible than the negatives to scarlet fever.

Or expressed otherwise :

124 negatives had 5 scarlet fever attacks, *i.e.* 4 per cent.
77 positives had 10 scarlet fever attacks, *i.e.* 14 per cent.

These numbers are very small but rather suggestive nevertheless. Up to the present our conclusions are that the Schick process of immunisation greatly reduces the risk to those nursing diphtheria.

B. A. I. PETERS, M.D., D.P.H.,

Senior Resident Medical Officer.

NOVERS HILL HOSPITAL.

VISITING MEDICAL OFFICER'S REPORT

for the YEAR 1922.

Cases remaining from the year 1921	...	...	16
Cases admitted during the year ending 1922	...	...	253
Died	...	...	6
Discharged	...	...	248
Remaining in hospital at the end of 1922	...	...	21

Summary of ages :—

4 & under.	5 to 10.	11 to 15.	16 to 20.	21 & over.
49	135	63	7	15

Cases found not to be suffering from S.F.	...	...	25
Doubtful	...	...	20
(None of these showed the characteristic "White Line.")			
Contracted in hospital	...	...	5

The type of scarlet fever was on the whole very mild, making a positive diagnosis at times difficult if not impossible.

Diphtheria was very troublesome more or less through the whole of the year, necessitating the opening of the Isolation Wards, thereby taxing the resources of our somewhat limited staff very considerably.

Complications :

Albuminuria ... 6	Nephritis ... 3	Measles ... 1
Diphtheria :—	Otorrhœa ... 7	Pneumonia ... 3
Positive ... 20	Endocarditis ... 7	Adenitis (bad) 6
Hofmann ... 96	Septicaemia ... 1	Diarrhœa ... 1
Rheumatism ... 2	Conjunctivitis ... 2	

Other Diseases :—

Chicken pox ... 6	Erythema Nodosum 1	Scabies ... 1
Urticaria ... 1	Malaria ... 6	
	Cerebro-spinal meningitis (?) ... 1	

The malaria cases were admitted from a ship at Avonmouth. They all did well, no complications ; time in hospital, 18 days.

Chicken Pox :—

Patient admitted—October 6th	C.P. rash October 20th	
„ 6th	C.P. „ November 1st	
„ 5th	C.P. „ „ 3rd.	
„ 6th	C.P. „ „ 3rd.	
„ 17th	C.P. „ „ 4th.	
„ 5th	C.P. „ „ 7th.*	

* Scarlet Fever doubtful).

Deaths :—

Notif. No. 268—M. Aged 35 years—Pneumonia (not S.F.), in hospital 14 days.

Notif. No. 410—F., 1-8/12—admitted from Children's Hospital with badly scalded neck and chest, S.F. doubtful, death from shock. In hospital 14 days.

Notif. No. 692—M.—1-6/12—Diphtheria, in hospital 3 days.

Notif. No. 1247—M.—10/12—Septicaemia following operation at B.R.I. for cleft palate. In hospital 8 days.

Notif. No. 716—M., aged 12—Endocarditis. In hospital 34 days.

Notif. No. 2199—M., aged 7—Nephritis. In hospital 5 days.

The general conduct of the hospital during the year has been very good. I have visited at all hours and invariably found the wards in a state that reflects great credit on the Nursing Staff for the neat and orderly way their work is done. I cannot speak too highly of the indefatigable energies of the Sister-Superintendent and Sister Taylor in looking after the comfort and welfare of the patients. I am also very grateful to them for the help they have given me in my work.

The installation of electric light and the covering of the floors with linoleum is a great boon, and has added materially to the more efficient work and comfort of the hospital.

E. H. CHURTON PAULI,

Visiting Medical Officer.

V. SUMMARY (for reference) OF NURSING ARRANGEMENTS, HOSPITALS AND OTHER INSTITUTIONS AVAILABLE FOR THE DISTRICT AND OTHER BENEVOLENT INSTITUTIONS AND SOCIETIES.
(Refer to Annual Report for 1921).

AMBULANCE FACILITIES.

(a) For Infectious cases.—2 Motor Ambulances maintained by Bristol Corporation.

(b) For non-infectious and accident cases.—4 Motor Ambulances (3 stretcher and 1 sitting) by Bristol City and Marine Ambulance Corps; 6 motor Ambulances (stretcher) by St. John Ambulance.

Various large firms in the City have their own private Ambulances for emergency cases.

LABORATORY WORK.

Routine :—

Bacteriological examinations by the City Analyst :—

1,042 specimens of Sputum were examined at the Bristol Municipal Tuberculous Dispensaries.

PATHOLOGICAL EXAMINATIONS.

Special Pathological examinations at the Pathological Laboratory, University of Bristol (paid by fee).

Laboratory, University of Bristol (paid by fee).				1922.
Cerebro-spinal Fever	...	...	...	2
Encephalitis Lethargica	...	...	...	2
Enteric Fever (Blood)	...	...	...	3
	(Faeces and Urine)	...	...	1
Diphtheria (for Virulence)	...	...	...	24
Malaria	...	...	...	4

It would conduce to progress if the fee system were abolished and the Pathological work, routine and special, arranged for with the University as an integral and necessary part of the Public Health Service.

DIPHTHERIA ANTITOXIN.

Diphtheria Antitoxin supplied by Bristol Corporation
gratuitously, 1,236,000 units.

PUBLIC HEALTH STAFF (City).

Medical Officer of Health (whole time)	...	...	1
Assistant Medical Officer of Health (whole time)		(Port also).	
Special assistance paid by fee.		0	
Home Nurses	...	...	3

CITY HOSPITALS.

Ham Green	Isolation Sanatorium	Whole-time Resident M.O.	1
		Assistant do.	2
		Matron and Nursing Staff—	
		Hospital	52
		Sanatorium	31
Novers Hill	(Smallpox or Fever)	Visiting Medical Officer (part time)	1
		Nursing Staff (including Home Sister and Nurs- ing Superintendent) ...	14
Frenchay Park		Visiting Medical Officer (Tuberculosis Officer, part time) ...	...
		Matron and Nursing Staff	6

MUNICIPAL TUBERCULOSIS DISPENSARIES.

Tuberculosis Medical Officer	...	1
Assistant	Do.	1
Tuberculosis Nurses	...	6

MATERNITY AND CHILD WELFARE
DEPARTMENT.

Medical Officer-in-Charge (part time)	...	1
Health Visitors	1 Superintendent	
	1 Assistant Superintendent.	
	21 Health Visitors.	

ANTE-NATAL CLINICS AND INFANT CLINICS.

Visiting Medical Officers (part time)	...	3
---------------------------------------	-----	---

VENEREAL DISEASES.

Medical Officer	...	...	...	0
(Work contracted out with Royal Infirmary and General Hospital).				

INSPECTING STAFF.

Chief Sanitary Inspector	...	...	...	1
Superintendent	...	...	...	1
Meat and Food Inspectors	...	...	...	3
Dairies and Cowsheds	...	...	...	2
Workshops	...	...	...	1
District	...	...	...	15

Housing Inspectors.

Chief Housing Inspector	...	...	...	1
Inspectors	...	...	...	2

V. D. CLINICS.

	BRISTOL GENERAL HOSPITAL			BRISTOL ROYAL INFIRMARY			TOTALS		
	M.	F.	Total	M.	F.	Total	M.	F.	Total
Number of persons under treatment or observation on 1st January, 1922	490	219	709	2,222	983	3,205	2,712	1,202	3,914
Number of new cases dealt with during 1922	270	45	315	558	199	757	828	244	1,072
Total attendances during the year	2,730	795	3,525	10,405	3,330	13,735	13,135	4,125	17,260
Aggregate number of "In-Patient" days of treatment given	187	28	215	544	195	739	731	223	954
Number of doses Salvarsan substitutes given	638			1,885					2,523

HOUSING.

ANNUAL REPORT, 1922.

Repair work under the Housing Acts 1890 to 1919 has been steadily carried out during the year, and the somewhat lower prices of materials and wages have encouraged some owners to comply with Formal Notices and to restore houses upon which Closing and postponed Demolition Orders have been made: very useful work has also been done in getting owners to make roofs watertight, hang window sashes and do other immediate repairs on houses which, but for the abnormal housing shortage, would have been condemned and demolished because of their worn out condition and environment.

Few people who are comfortably housed realise the truly appalling conditions under which far too many of their fellow citizens have to suffer.

Gross overcrowding is far too rife, and it is useless to take any action. There is no other alternative until a sufficient number of new houses are provided.

The absence of houses is a very serious handicap for young people if they have to start their married life in a bed-sitting room in an already overcrowded house. The "bottom drawer" is not required to-day.

The common occurrence of births taking place in the presence of other members of a family has ceased to shock, and on the grounds of morality and decency prompt steps should be taken to overcome all obstacles.

When one considers the increase in the City's population, the number of marriages, and takes the number of houses built since 1914 one can obtain an accurate figure of how many houses are necessary to meet current demands. Unfit houses need not be added to prove the case for building, though their replacement by fit houses is imperative.

The powers of Section 28 of the Housing Act of 1919 are hampered by the interpretation of the very vague and elastic term "Reconstruction." Under this Section a notice is served on an owner specifying the work which the Local Authority considers necessary to be done to render the houses fit for human habitation. If the owner considers that the work involves so-called "reconstruction" he can declare his intention of closing the house as being unfit.

Your Committee has been severely handicapped in getting work done because of this loophole.

I consider if it is necessary to rebuild any dangerous part of a house, and the rebuilding consists only of reinstating on proper foundations the dangerous walls, especially when the re-building can be effected without turning the tenants out, and the tenant is willing to put up with any temporary inconvenience if it ultimately means that his house will be made safe and fit, such work should not be considered "reconstruction" within the meaning of the Section.

A recent indefinite decision of the controlling Government Department that the re-building of annexes involved "recon-

struction" has made your Committee hesitate to serve Formal Notices asking for this urgent work to be carried out.

An amendment of this Section, with a clear definition of what work may be included in a Formal Notice will enable Local Authorities to save thousands of houses and would avoid the necessity of accepting the making of Closing Orders by Owners. There are other amendments necessary to make Section 28 workable and efficient, but I understand they will be dealt with in the new Housing Bill.

I again emphasise the importance of giving permissive power to Local Authorities after a Demolition Order has come into operation, of acquiring any houses at their site value and to alter, amend or reconstruct them so as to make them fit, or to demolish them. Much useful work could be accomplished in pruning out congested areas if this power were given, and it would stir owners to make houses fit instead of allowing them to sit tight and draw their rents without spending any money on repairs. Appeals could be allowed against maintaining houses if the interested persons could show that they had purchased the houses to demolish for industrial extensions, institutional or other useful purpose of more importance than housing.

In spite of the overcrowding and bad repair of houses I find the greater number of tenants keep their rooms and themselves surprisingly clean, and pay their rents regularly, whether Housing Notices and Orders are on their houses or not. There is, however, a small percentage who take no interest in the houses or rooms they occupy, neither will they willingly pay their rent. In such cases it seems unfair to ask owners to be philanthropists and continually repair their houses. Your Committee always have shown the greatest consideration for such owners. The tenant should be made to realise his obligations and responsibilities as well as owners.

The following table shows the position in regard to houses upon which Closing and Demolition Orders are outstanding :—

	<i>Occupied.</i>	<i>Void.</i>
No. of houses outstanding upon which Closing and Demolition Orders have been made ...	348	112
No. of houses which can be made fit ...	147	18
No. of houses which cannot be made fit ...	201	94
No. of such houses where work of repairs is in hand, or where some work has been done	103	11
<hr/>		
No. of houses demolished for extension of Banks, Factories, Warehouses, Shops, Cinemas, Music Halls, Institutional Purposes, and Street Improvements.		
1914 to date	536	
Of this number considerably more than one-third have been demolished by the Local Authority for Street Improvements.		

A. W. GRIFFITHS,

Chief Housing Inspector.

HOUSING ACTS 1890 to 1919.

Synopsis of Work done under the Housing Acts during 1922.

Total number of houses repaired under the Housing Acts	216
No. of Formal Notices served under Section 28 of the 1919 Act	45
No. of Formal Notices complied with	5
No. of Specifications and Informal Notices served	158
No. of Houses represented as being unfit	200
No. of houses Closed under Order	107
No. of Closing Orders determined	20
No. of Notices to Quit served	71
No. of Notices to Quit obeyed	28
No. of Demolition Orders made	132
No. of Demolition Orders determined	13
No. of houses demolished under Order	42
No. of Orders postponing operation of Demolition Orders served	38
No. of houses demolished voluntarily after Closing Orders	12
No. of Unfit houses repaired during 1922	67
No. of houses inspected during 1922	199
Total No. of Closing Orders made 1914 to 1922	860
Total No. of Closing Orders determined	124
Total No. of houses demolished voluntarily	75
Total No. of Demolition Orders made	432
	631
Total No. of Closing Orders outstanding at end of 1922	292
Total No. of Demolition Orders made 1914 to 1922	432
Total No. of Orders postponing operation of Demolition Orders	82
Total No. of Demolition Orders carried into effect	193
	275
Total No. of Demolition Orders outstanding at end of 1922	157
Total No. of houses represented as Unfit 1910 to 1922	2465
No. of Unfit houses repaired 1910 to 1922	763
No. of Unfit houses demolished 1910 to 1922	281
(including 75 voluntarily after Closing Orders)	
No. of Unfit houses outstanding at end of 1922	1,421
	2,465
No. of houses visited by the Housing of the Working Classes Sub-Committee during the year 1922	222

A. W. GRIFFITHS,
Chief Housing Inspector.

YEAR	Re- ported as Unfit	Unfit Houses made Fit	CLOSED		CLOSING ORDERS [DETER- MINED]	No. of families dehoused	Demoli- tion Orders made	DEMOLISHED	
			Under Order	Volun- tarily				Under Order	Volun- tarily
1910 to 1913	294	325	183	524	21	162	13	13	106
1914 to 1918	919	198	261	309	64	293	112	90	300
1919	541	66	148	27	19	—	49	15	37 (10 after C.O.)
1920	262	36	151	1	8	—	59	17	30 (20 after C.O.)
1921	249	71	184	4	24	—	80	29	37 (33 after C.O.)
1922	200	67	107	6	33	28	132	42	39 (12 after C.O.)
	2465	763	1034	871	169	483	445	206	549

NOTE.—Of the 33 houses determined in 1922—13 were made fit after the making of Demolition Orders. Number of houses closed and demolished for extension of Business and Institution Premises during 1922 ... 6 Total number of houses closed from all causes, 1890 to 1922 ... 2428 Total number of families dehoused by Closing Orders, 1910 to end of 1922 ... 483 Total number of houses demolished or closed from all causes, 1910 to end of 1922 ... 2109 Total number of houses erected to let at £26 per annum or under, 1910 to end of 1922 ... 1252 Total number of houses erected to let at £26 per annum or under, during 1922 ... 39 Total number of houses erected on Housing Sites during 1922 ... 334 Total number of houses inhabited at end of 1922 is estimated to be ... 74,700 No. of houses void 281

A. W. GRIFFITHS
Chief Housing Inspector.

1922

HOUSING.

No. of new houses erected during the year :—

(a) Total	415
(b) As part of a Municipal Housing Scheme ...	334

UNFIT DWELLING-HOUSES.

Inspection.

(1) Total No. of dwelling-houses inspected for housing defects (under Housing Acts) ...	199
(2) No. of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910 ...	199
(3) No. of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation ...	199
(4) No. of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation ...	0

2.—Remedy of Defects without Service of Formal Notices.

No. of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their Officers	178
--------------------------------------------------------------------------------------------------------------------------------------	-----

3.—Action under Statutory Powers.

(a) <i>Proceedings under Section 28 of the Housing, Town Planning, &c. Act, 1919.</i>	
(1) No. of dwelling-houses in respect of which notices were served requiring repairs ...	45
(2) No. of dwelling-houses which were rendered fit :—	
(a) By Owners	5
(b) By Local Authority in default of owners	None
(3) No. of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close	None
(b) <i>Proceedings under Public Health Acts.</i>	
(1) No. of dwelling-houses in respect of which Statutory notices were served requiring defects to be remedied ...	237
(2) No. of dwelling-houses in which defects were remedied :—	
(a) By Owners	218
(b) By the Local Authority in default of owners	None
(c) <i>Proceedings under Sections 17 and 18 of the Housing, Town Planning, &c. Act, 1909.</i>	
(1) No. of representations made with a view to the making of Closing Orders ...	200

(2) No. of dwelling-houses in respect of which Closing Orders were made	107
(3) No. of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	33
(4) No. of dwelling-houses in respect of which Demolition Orders were made	132
(5) No. of dwelling-houses demolished in pursuance of Demolition Orders	42

A. W. GRIFFITHS,
Chief Housing Inspector.

D. S. DAVIES, M.D.,
Medical Officer of Health.

REPORT ON WORK OF SANITARY INSPECTORS
FOR THE YEAR ENDING DECEMBER 31st, 1922.

Complaints received and attended to	2,516
No. of visits and re-visits on account of Nuisances, etc. ...	47,813
,, Informal Notices	2,631
,, Formal Notices and Orders served	237
,, Prosecutions for non-compliance	16
,, Articles disinfected	73,418
,, Articles destroyed	979
,, Houses disinfected	2,830
,, Visits to houses for infectious disease	4,437
,, Tests to drains	1,011

Summary of Work effected.

No. of drains relaid	177
,, drains partially re-laid	491
,, sink troughs fixed	367
,, sinks, drains, etc. trapped	814
,, W.C.'s fitted with new pans and traps	575
,, ,, repaired and cleansed	304
,, ,, fitted with flushing appliances	171
,, Additional W.C. accommodation	22
,, Houses repaired	874
,, Roofs repaired	1,050
,, Yards, etc., paved, floors repaired	1,305
,, Rooms cleansed, papered, etc.	3,409
,, Passages, etc., cleansed, papered, etc.	852
,, Cesspools abolished	12
,, Offensive deposits removed	145
,, Manure Pits or Refuse Bins provided	1
,, Pigs, etc. removed	29
,, Polluted Wells closed	4
,, Houses supplied with Co.'s water	51
,, Overcrowding nuisances abated	14
,, Other Nuisances abated	2,534
 Total	 13,201

Common Lodging-Houses.

No. of Visits and re-visits	...	...	...	1,463
" Notices served	...	...	...	53
" Nuisances abated	...	...	...	152

Tenement Houses.

No. of Visits and re-visits	...	...	...	1,121
" Notices served	...	...	...	75
" Nuisances abated	...	...	...	448

Bakehouses.

No. of visits and re-visits...	...	...	...	962
" Notices served	...	...	...	106
" Nuisances abated	...	...	...	303

Dairies, Cowsheds and Milkshops.

No. of visits and re-visits...	...	...	...	5,822
" Notices served	...	...	...	173
" Milk samples taken	Tuberculosis	25		
	Special Samples	28		53
" Nuisances abated	...	...	...	1,841
" Cowkeepers	...	...	...	64
" Cowsheds	...	...	...	123
" Cows	...	...	...	776
" Dairies and Milkshops	...	...	...	901
" Milk Purveyors from outside the City	...	...	...	50

Factories, Workshops, Offensive Trades, etc.

No. of Workshops on Register	...	...	...	1,636
" Visits and re-visits	...	...	...	2,422
" Notices served	...	...	...	299
" Offensive trades visited	...	...	...	60
" Smoke observations taken	...	...	...	110
" Nuisances abated	...	...	...	566

Slaughter Houses, etc.

No. of Visits and re-visits	...	...	...	10,791
" Notices served	...	...	...	17
" Nuisances abated	...	...	...	70

	T.	Cwt.	Qrs.	lbs.
Weight of Meat destroyed	...	36	6	2

Weight of Meat destroyed found by				
Inspectors	...	...	27	9

Weight of Meat destroyed reported				
by owners...	...	...	8	17

Packages of other foods destroyed				
after inspection	...	Fish	...	1,346

		Fruit	...	1,027
		Vegetables	...	47

		Rabbits	...	225
		Poultry	...	6

		Cheese	1cwt.	2qrs.	22lbs.
		Eggs	...	...	17 cases

Number of Pigs inspected :—		English	...	49,501
		New Zealand	...	3,268

		Dutch	...	1,251
		Argentine	...	7,470

		U.S.A.	...	3,321
No. of Registered Slaughter Houses at end of year	...		...	49

" Licensed	...	...	...	31
" Knackers' Yards	...	...	...	3

" Docks	...	...	...	2

E. CARRATT, Chief Sanitary Inspector.

D. S. DAVIES, M.D., Medical Officer of Health.

BRISTOL PORT SANITARY DISTRICT.

REPORT OF THE MEDICAL OFFICERS OF HEALTH for the Year 1922.

Port Sanitary Authority—The City Council.

Port Sanitary District permanently constituted—1894.

Rateable value of City (District Rate), 1922—£1,926,063:18:9.

Gross expenditure in connection with Port Sanitary Authority for financial year ended March 31st, 1922, £1,962 11s. 1d., including expenditure of £288 6s. 9d. in connection with Aliens Order which is recoverable from the Government. The amount chargeable to the rates was £764 14s. 2d., which equals a rate in the £ of 0.098d.

The present condition of Port Sanitary work in Bristol is unsatisfactory, on account of first, the loss of the Inspecting Launch, which has been sold and not replaced; and, secondly, the collision which put the Hospital Ship out of use, depriving us at once of hospital beds for ship-brought disease, and of a useful base for tide-service.

The war, so far from giving any excuse for slack supervision over Port Inspection, called for increased vigilance. Disease was rife on many of the battle-fronts, and the advent of peace has opened up closed trade routes, and may thus promote some wide diffusion of disease.

There would appear to be a tendency at present to overlook the importance of keeping the Port defences in a state of full preparedness. This is a fatal error, and may be followed by most serious consequences.

TONNAGE FROM FOREIGN PORTS—arriving at Bristol

Docks (net registered tons) :—

City Docks, including Avonmouth and Portishead :—
1922, 1,889,331 tons.

GRAIN IMPORTS :—

1922—Qrs. 4,127,196 total for City, Avonmouth and Portishead Docks.

INSPECTING STAFF.

Chief Port Inspector and Food Inspector :—

Inspector JOHN A. ROBINSON, San. Insp. Exam. Bd., London; Meat Insp. Cert., R. San. I.; Meat Insp. Cert., Liverpool Univ.; San. Science, Liverpool Univ.

Port Sanitary Inspector at Avonmouth :—

Inspector E. H. SCORRER, Meat Insp. Cert. R. San. I.; Cert. I. of N., R. San. I.

Assistant Port Sanitary Inspectors :—

W. GOUGH and J. ROWE.

PORT OF BRISTOL.

There is no direct passenger traffic between the Baltic and North Sea Ports and the Port of Bristol, but there is considerable trade not only with these Ports, but also with Mediterranean and Black Sea Ports, from which disease (especially Smallpox) has on several occasions been introduced.

The possibility of Plague introduction, as instanced in 1919, has also now to be reckoned with.

CHOLERA REGULATIONS.

Table A—Vessels from Foreign.

Arrivals during 1922 requiring Medical Inspection as:—

	Bristol.	Gloucester.	Totals.
Infected ...	...	...	...
Suspected ...	...	...	...
Having come from Infected Ports }	44	3	47
Total ...	44	3	47

	Inspected in Walton Bay		Inspected in Kingroad		Bristol Boats Inspected at Dockside		
	Bristol Boats	Glo'st'r Boats	Bristol Boats	Glo'st'r Boats	Bristol	Avon-mouth	Portis-head
Infected ...	...	...	...	...	...	...	...
Suspected ...	...	...	...	...	...	...	...
Having come from Infected Ports ...	1	1	...	2	19	22	2
Total ...	1	1	...	2	19	22	2
	2		2		43		

A.—GENERAL MEDICAL INSPECTION.

1.—**Medical Examination** of passengers or crews arriving in the Port of Bristol is at present limited to :—

- (a) Arrivals from "infected" or "suspected" Ports under the Cholera, etc. Regulations.
- (b) Cases notified on arrival as having infectious sickness or suspicious illness on board.
- (c) Aliens, since April 1st, 1920.

2.—**Port Medical Staff.**

The City Medical Officer of Health holds since 1886, the separate appointment of Port Medical Officer of Health, for which he receives an honorarium of £50 per annum. In 1907, duties under the Foreign Meat and Unsound Food Regulations were imposed. There is no salaried Assistant Port Medical Officer of Health, but an Assistant Port Medical Officer of Health was appointed by the Bristol Council in 1884, and is paid by fee for work done. The average cost of this medical assistance for Bristol Port over the 5 years, 1913-7 inclusive, was £45 17s. 1d. The cost in 1922 was £28 6s. 11d. The cost of Aliens inspection is defrayed by the Central Government.

Two Emergency Port Medical Officers of Health (in private practice) are also appointed, but seldom called for; their fees are included in the above.

Certain work is also imposed upon the Bristol Port Sanitary Authority in respect of Gloucester-bound ships passing through Kingroad, under the Cholera, etc. Regulations; the cost of the work is defrayed by Gloucester.

3.—**Co-operation of Customs Officers.**

All vessels arriving for the Port of Bristol pass through the anchorage of Kingroad. When the Customs Boarding Station was in Kingroad, the Customs service was most useful, and cordially assisted in the working of the Cholera Regulations and other work. Since, however, the Customs Boarding Station has been removed from Kingroad, they are no longer in a position to intercept arrivals before they come into Avonmouth Dock, or take the river for Bristol, so that the Customs are a negligible quantity now in disease work so far as any information before docking is concerned.

4.—**Port Inspection Launch.**

In 1893, Bristol put a Port Inspection Launch on service in Kingroad, which obviated any difficulty, as sanitary boarding took place in Kingroad by arrangement with the Customs. The Port Inspection Launch was sold in 1912, and has not been replaced. A tug has to be hired when necessary to visit any vessel detained in Kingroad; otherwise arrivals cannot be inspected or passengers and crews examined until arrival at dockside. This is the general rule. When a tug is not available, the vessel may escape inspection until docking.

5.—Naval and Military Aid.

During the naval and military occupation of Avonmouth Dock, safety was secured by working in co-operation. The D.A.D.M.S. Embarkation, Avonmouth, was particularly helpful. I have pointed out to my Authority the added risks attending the loss of this protection, and following on the re-opening of communication with the Continent.

6.—Hospital Accommodation.

In 1893, Bristol provided a Hospital Ship for isolation and observation accommodation for ship-borne cases (20 beds). This was conveniently moored at the river mouth, but was run down in 1916, sold, and has not been replaced. The nearest available hospitals are the City Hospitals (6 miles). There are no "contact" shelters.

7.—Waiting Rooms.

Waiting rooms available for medical examination—none over which the Port Sanitary Authority has control.

8.—Cleansing and Disinfecting Station.

The nearest (6 miles) is at the Central Disinfecting Station, Bristol.

The procedure at present is:—

- 1.—Ship arrives at dockside or in river—Port Sanitary Inspector visits and enquires.
- 2.—If Infectious Disease found, or if from infected Port, Medical Officer advised and visits.
- 3.—Case and effects removed to City Hospitals.
- 4.—Disinfection of cabins, etc. carried out.
- 5.—Rat precautions, etc. carried out for plague.

The nature of the new provision needed depends upon the stringency of the contemplated Regulations.

- 1.—If every arrival is to be medically examined, one whole-time Assistant Medical Officer of Health at least is absolutely necessary, with necessary reliefs.
- 2.—If vessels from Foreign Ports are to be visited and examined in the anchorage of Kingroad or in Walton Bay, the replacement of the Sanitary Inspecting Launch is essential.
- 3.—If separate observation and isolation accommodation for ship-borne cases is to be provided as before, the Hospital Ship must be replaced.

Personally we are of opinion that a secluded part of the Dock to which no access from shore is permissible, would better serve in place of the Kingroad "Anchorage," under the Cholera Regulations, but whole-time medical service in any case is unavoidable for the medical inspection of every ship arriving.

A Bathing, Cleansing and Disinfestation Centre at Avonmouth is necessary to complete protection, especially in regard to Plague.

PORT SANITARY,

TABLE B.
Bristol.
Diseases occurring on Ships during voyage or on arrival.

1922.	Name of Ship.	Loading Port.	Disease.	No. of cases	GENERAL PARTICULARS.
Jan.	6 s.s. "American Press" "	New Orleans	Jaundice	1	Medically treated during voyage.
"	7 s.s. "Novington" "	East London	Enteric Fever	8	4 left in Hospital at Las Palmas, others convalescent [on arrival
"	8 s.s. "Camito" "	West Indies	Suicide	1	During voyage.
"	8 s.s. "Camito" "	West Indies	Appendicitis	1	During voyage.
"	19 s.s. "Gloucester Coast" "	Falmouth	? Influenza	1	Medically treated on arrival.
March	25 s.s. "Patuca" "	Santa Marta	Catarrhal Jaundice	1	Removed to Bristol General Hospital.
April	1 s.s. "Odysseus" "	Rosario	Internal	1	Removed to Hospital at St. Vincent.
"	2 s.s. "Camito" "	West Indies	Inflammation	1	Proceeded to Liverpool.
"	5 s.s. "Osman" "	Bathurst	? T.B.	1	Medically treated on arrival.
"	10 s.s. "Motagua" "	Kingston and Santa Marta	Pulmonary	1	Medically treated on arrival.
"	27 s.s. "Swynmead" "	Rosario and San Nicholas	Catarrh	1	Landed at Kingston.
"	28 s.s. "Leevsum" "	Rosario	Appendicitis	1	Removed to Bristol General Hospital.
"	30 s.s. "Lester" "	Hamburg	Kidney Disease	1	Medically treated at Las Palmas and proceeding to Amsterdam.
June	8 s.s. "Bolivia" "	Bathurst	Appendicitis	1	Medically treated on arrival.
"	8 s.s. "Bolivia" "	Bathurst	Malaria	1	Removed to Bristol General Hospital.
"	14 s.s. "Reno" "	Norway	Wound in stomach	1	Convalescent on arrival.
July	11 s.s. "Ulvikka" "	Palermo	Abscess of Neck	1	Medically treated on arrival.
"	12 s.s. "Gertrud" "	Viborg, Finland	Veneral Disease	1	Do.
"	31 s.s. "Dictator" "	Valencia	Do.	1	Advised medical treatment.
					Do.

Aug.	20	s.s. " Bayano "	... West Indies	... Perirethral Abscess	1 Operated on by Ship's Surgeon 14/8/22.	Diseases occurring on Ships during voyage or on arrival	
						Do.	Do.
	22	s.s. " Rheinfels "	... Basra	... Dysentery	1 Removed to Bristol General Hospital. Died 13/9/22.	Do.	Do.
"	22	s.s. " Rheinfels "	... Basra	... Septic Abscesses	1 Medically treated on arrival.	Do.	Do.
"	22	s.s. " Bannock "	... Glasgow	... Enteric Fever	1 Removed to Hospital at Glasgow.	Do.	Do.
Sept.	5	s.s. " Tuscalosa City "	... San Francisco,	... ? Venereal Disease	1 Landed at Kobe.	Do.	Do.
"	?	s.s. " Tuscalosa City "	... Manilla	Measles	1 Well on arrival.	Do.	Do.
"	?	s.s. " Trekieve "	... Basra	... Heart Disease	1 Removed to Hospital at Gibraltar.	Do.	Do.
"	21	s.s. " Swane "	... Halifax, N.S.	... Drowned	1 Body brought home for burial.	Do.	Do.
"	22	s.s. " Motagua "	... Kingston and	... Influenza	1 Well on arrival.	Do.	Do.
"	24	s.s. " Motagua "	... Santa Marta	... Patras	1 Medically examined on arrival.	Do.	Do.
"	29	s.s. " Navigator "	... Patras	... Weak heart	1 Landed at Aden.	Do.	Do.
Oct.	14	s.s. " Tredinnick "	... Bombay	... Fever	1 Advised medical treatment.	Do.	Do.
"	18	s.s. " Baron Polwarth "	... Portland Oregon	... Rheumatism	1 Removed to Ham Green Hospital.	Do.	Do.
"	22	s.s. " Patuca "	... Santa Marta	... Enteric Fever	1 Proceeded home	Do.	Do.
Nov.	17	s.s. " City of Versailles "	... Alexandria	... Dysentery	20 Ten cases removed to City Hospitals on arrival (6 to Novers Hill and 4 to Ham Green).	Do.	Do.
"	22	s.s. " Frey "	... Dakar, Bathurst	... Malaria		Do.	Do.
			Gambia River and Rufisque	La Plata,		Do.	Do.
"	24	s.s. " Treverbyn "	... Alexandria	? Malaria	1 Left in Hospital at St. Vincent.	Do.	Do.
"	26	s.s. " Hedrun "	... Gothenburg	? Venereal Disease	1 Advised medical treatment.	Do.	Do.
"	29	s.s. " Gerdrud "	... Basra	... Malaria	1 Medically treated on arrival.	Do.	Do.
"	29	s.s. " Kurmack "	... Patras	... Typhus (? Enteric)	1 Medically treated on arrival.	Do.	Do.
"	29	s.s. " Addington "	... Patras	... ? Enteric Fever	1 Landed at Algiers. Died 13/11/22.	Do.	Do.
"	29	s.s. " Addington "	... Patras	... ? Phthisis	1 Removed to Hospital at Liverpool.	Do.	Do.
Port of Gloucester.							
Aug.	2	s.s. " Maid of Hydra "	... Galatz, Roumania	{ Enteric Fever ? Malaria	1 Port M.O.H. Gloucester advised.	Do.	Do.

MALARIA.

Owing to the abolition of the Port Hospital Ship, considerable difficulty arose on the arrival on 22nd November of the S.S. "Frey" from the West Coast of Africa with several cases of Malaria on board. The cases ultimately had to be distributed between Ham Green (4 cases) and Novers Hill (6 cases) thus blocking up the few spare City beds at Ham Green, and adding difficulties to the possible isolation of Smallpox at Novers Hill Hospital.

(Ten other cases on board this ship were convalescent and were medically treated on arrival by a local medical practitioner at Avonmouth. Two cases had been landed at Vigo on the voyage—making a total of 22 cases of the ship's crew of 30).

The loss of the Hospital Ship is a serious blow to the sufficiency of protection against the introduction of disease through the Port of Bristol.

The Hospital Ship was in 1903-1904 of extreme use in supplementing the meagre Smallpox accommodation available in the City.

Full information of the history of the cases on board this ship was forwarded to the Ministry of Health.

RATS AND MICE DESTRUCTION ACT, 1919.

This Act is administered by a Rats Officer, acting under the instructions of the City Engineer.

At Avonmouth Docks a rat-catcher is employed by the Docks Committee in clearing the sheds and warehouses. He is given authority to work on board ship in the docks, for which he is compensated by the master or agents.

At Bristol Docks, the Rats Officer supervises the destruction of the rats in the sheds and in the granaries, and conducts a systematic search for the rodents.

The following tables give the results of their work.

FORM A.

Amount of Shipping entering the Port Sanitary District during the year 1922.

1922.	Number.	Tonnage.	Number Inspected.		Number reported to be Defective.	Number of Orders issued (informal).	Number of Formal Notices.
			By the Medical Officer of Health	By the Sanitary Inspector.			
Foreign—							
Steamers	897	1,837,229	47	872	84	80	4
Sailing	4	5,857	—	4	—	—	—
Fishing	—	—	—	—	—	—	—
Total Foreign	901	1,843,086	47	876	84	80	4
Coastwise—							
Steamers	4,860	1,008,380	—	295	19	19	—
Sailing	1,695	156,612	—	187	7	6	1
Fishing	—	—	—	—	—	—	—
Total Coastwise	6,555	1,164,992	—	482	26	25	1
Total Foreign and Coastwise	7,456	3,008,078	47	1,358	110	105	5

(Not including 72 vessels individually inspected under the Aliens Order).

1922

FORM B.
RATS DESTROYED IN 1922. (Avonmouth Docks).

Number of Rats.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total in Year
Caught alive	... 223	294	253	482	204	215	431	228	297	462	437	319	3,845
Found dead	... 349	240	327	177	487	513	356	482	361	312	188	578	4,370
Total	... 572	534	580	659	691	728	787	710	658	774	625	897	8,215
From Sheds and Warehouses in Docks	... 565	528	554	461	547	682	778	710	652	718	488	764	7,447
From Ships in Dock	... 7	6	26	198	144	46	9	—	6	56	137	133	768
Total	... 572	534	580	659	691	728	787	710	658	774	625	897	8,215
Rats examined	... 4	17	18	8	12	10	18	2	16	16	15	8	144
,, infected with plague	... —	—	—	—	—	—	—	—	—	—	—	—	—
,, not infected	... 4	17	18	8	12	10	18	2	16	16	15	8	144

Of the 144 rats examined at the University of Bristol, there were 55 Black Rats, 87 Brown Rats, and 2 Alexandrine Rats.

January	21,800	poison baits laid by Rat Catcher.
April	24,800	do.
July	27,000	do.
September	1,000	do.
October	7,000	do.
November	3,000	do.
December	23,000	do.

107,600

PLAQUE PRECAUTIONS: MEASURES AGAINST RATS.

1	2	3	4	5	6	7	8	9	10	RESULTS.												
NAMES OF VESSELS ARRIVING IN BRISTOL PORT SANITARY DISTRICT.				VESSELS SUBJECTED TO MEASURES OF RAT DESTRUCTION.																		
				NAMES OF VESSELS.		Plague Infected.		Plague Suspected.		From Infected Ports.		From Infected Ports.		Number of Other Vessels		Measures employed (trapping, poisoning, fumigation, etc.)		Number of Rats killed.		Remarks.		
Plague Infected.	Plague Suspected.	From Infected Ports.	ss. Thorddal	ss. Ashtabula	ss. Prince	Trapping	Trapping	Trapping	Trapping	ss. Tudor	ss. Prince	ss. Tudor	ss. Prince	ss. Ashtabula	ss. Prince	Trapping	Trapping	1100 poison baits laid in holds, etc.	1100 poison baits laid in holds, etc.	do.	do.	
" Homeford	" Conde	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	26	26	do.	do.
" Amapoora	" Emlynian	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6	6	do.	do.
" Hilde	" Grunun	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	189	189	do.	do.
" Nordsee	" Bretwalda	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	26	26	do.	do.
" Neuzadi	" Antigone	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	18	18	do.	do.
" Worsley Hall	" General Petite	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	46	46	do.	do.
" Yoluo	" Shahristan	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	42	42	do.	do.
" Bavarian	" Inverness	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7	7	do.	do.
" Arabistau	" Rheiufels	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	954	954	do.	do.
" Orion	" Bhamo	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	62	62	do.	do.
" Trekieve	" Wallace	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	56	56	do.	do.
" Dorsetshire	" Tudor Prince	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	64	64	do.	do.
" Homeford	" Navigator	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	215	215	do.	do.
" Herefordshire	" Sijau	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1325	1325	do.	do.
" Gazano	" Melpomene	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	95	95	do.	do.
" Tesco	" City of Versailles	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	do.	do.	do.	do.
" Storviken	" Hedrun	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	26	26	do.	do.
" Lizzie	" Gibel Yedid	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	115	115	do.	do.
" Homerford	" Estrand	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	do.	do.	do.	do.
" Torrid	" Efigir	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	do.	do.	do.	do.
" Europa	" Ampurman	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	768	768	do.	do.
" Soumen Poika	" Eros	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5999	5999	do.	do.
" Eros	" Parthenon	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	do.	do.	do.	do.

BRISTOL DOCKS.

1922.	Traps Laid.	Rats Caught.	Poisoned		Baits Taken.
			Baits Laid.	Baits Taken.	
January	...	218	58	500	400
February	...	384	102	650	470
March	...	408	136	1,100	850
April	...	296	92	—	—
May	...	336	94	1,350	1,110
June	...	208	70	500	420
July	...	288	70	700	600
August	...	272	73	600	450
September	...	336	94	500	410
October	...	384	103	600	450
November	...	336	91	—	—
December	...	318	82	600	410
Total	...	3,784	1,065	7,100	5,570

PORTISHEAD DOCKS.

1922.	Rats caught and destroyed.		
January	0
February	17
March	16
April	20
May	12
June	17
July	16
August	22
September	30
October	33
November	26
December	16
Total			225

D. S. DAVIES, M.D., D.P.H.,

Port Medical Officer of Health.

JOHN C. HEAVEN, L.R.C.P., M.R.C.S., D.P.H.,

Assistant Port Medical Officer of Health.

MEDICAL INSPECTION OF ALIENS.

PORT SANITARY DISTRICT OF BRISTOL.

Annual Return by the Medical Inspector of Aliens for
Year ended 31st December, 1922.

Aliens arriving at the Port *		No. of temporary visitors, i.e., Aliens whose stay in this country will not exceed three months			No. of Aliens who intend to settle permanently or remain in this Country for more than three months.		
Total Number	No. subjected to medical inspection	Total Number	No. subjected to medical examination.	No. of Certificates issued.	Total Number	No. subjected to medical examination.	No. of Certificates issued.
469	377	130	3	—	84	68	—

ALIENS IN TRANSIT.			TRANSMIGRANTS.		
Total Number.	No. subjected to medical examination	No. of Certificates issued.	Total Number	No. subjected to Medical examination	
255	—	—	—	—	—

* Number to include all aliens in transit and transmigrants, but not alien seamen

+ The term "Inspection" relates to the preliminary inspection of aliens to pass before the Medical Inspector

‡ The term "Medical Examination" relates to detailed medical inspection

Particulars relating to Detailed Medical Examination of Aliens.

Aliens who were subjected to detailed medical examination and were not certified by Medical Inspector

71

Number of each of the following certificates issued by the Medical Inspector of Aliens:—

(a) Certificate that an alien is a lunatic, idiot, or mentally deficient

(b) Certificate that, for medical reasons, it is undesirable that an alien should be permitted to land

(c) Certified that an alien is suffering from some disease, defect or deformity, which may interfere with his capacity to support himself or his dependents

(d) Certificate that an alien is suffering from one of the acute infectious diseases

(e) Certificate that for the purposes of an adequate medical examination, it is necessary for the alien to land in order that he may be examined ashore

Transmigrants.

Number of certificates of the cleansing of verminous transmigrants given by the Medical Inspector of Aliens to the Immigration Officer	...	...	—
Number of medical certificates in respect of transmigrants suffering from trachoma, fevers, etc., given to the Immigration Officer	...	...	—

Particulars relating to Alien Traffic.

Total number of passenger vessels carrying aliens which arrived during the year	...	...	56
Number dealt with by Inspector of Aliens	...	...	46
Total number of cargo vessels carrying alien passengers which arrived during the year	...	...	16
Number dealt with by Inspector of Aliens	...	...	2
Any other vessels in connection with which the Medical Inspector has had to take action in regard to aliens	...	...	—

JOHN C. HEAVEN,
 L.R.C.P., M.R.C.S., D.P.H.,
Medical Inspector of Aliens.

D. S. DAVIES, M.D.,
Supervising Medical Inspector of Aliens.

BRISTOL PORT SANITARY DISTRICT.

Report of the Chief Port Sanitary Inspector for the Year 1922.

The Number of ships inspected at Avonmouth Dock or River entrance during 1922 was ...	647
By tug in Walton Bay or Kingroad ...	4
Total ...	651

Number of ships bound to the Port of Gloucester, 3.

The number inspected in Dock after arrival, 1,358.

The nationality and the number of ships dealt with, and defects found, were as follows :—

Nationality.	No. of Ships.	No. having Defects.
British ...	983	92
American ...	97	3
Belgian ...	1	—
Danish ...	11	—
Dutch ...	45	—
French ...	28	—
Greek ...	4	2
German ...	17	—
Italian ...	5	2
Japanese ...	7	1
Norwegian ...	79	2
Rumanian ...	1	1
Finland ...	2	1
Spanish ...	22	1
Swedish ...	51	2
Portuguese ...	2	1
Dantzig ...	1	—
Esthonian ...	1	1
Austrian ...	1	—
Totals ...	1358	109

Percentage of the total number, 80.

PORT SANITARY.

TABLE A.

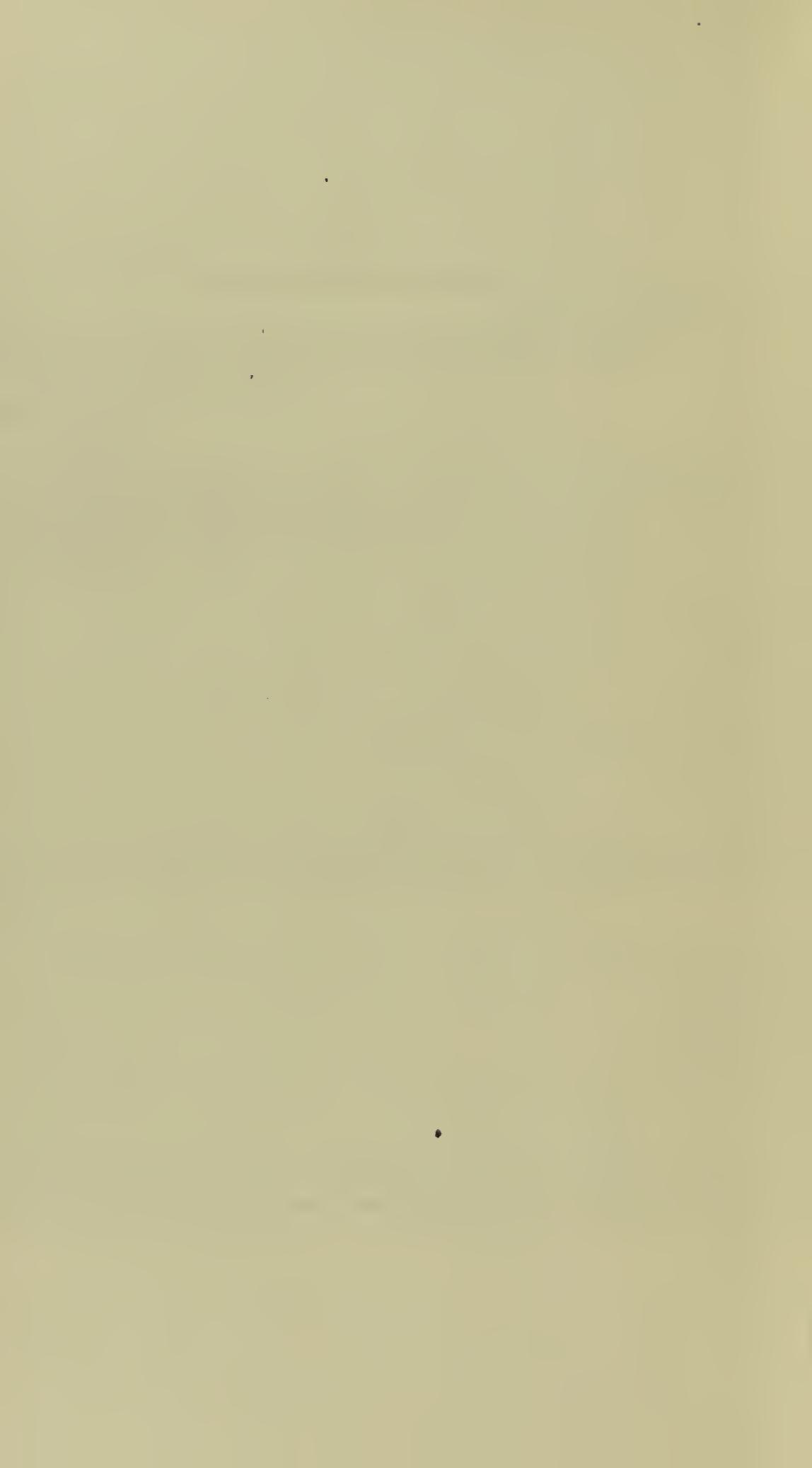
Bristol.

SHIP INSPECTION AT BRISTOL, AVONMOUTH, PORTISHEAD AND KINGROAD DURING THE YEAR 1922
Showing Particulars of Inspection, the Action taken, and results.

FROM FOREIGN PORTS.

COASTWISE

British Steamers from Coastwise	295	—	295	—	6	12	—	2	1	2	6	1	3	3	—	—	—	36	17	2	—	—	49	70	6,953	
British Sailers from Coastwise	—	179	179	—	2	5	1	1	—	—	1	—	—	1	—	—	—	—	11	5	1	1	—	—	7	630
Foreign Steamers from Coastwise	4	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	107	
Foreign Sailers from Coastwise	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	
Total Coastwise	299	180	474	5	8	17	1	3	1	2	7	1	3	4	—	—	—	47	22	3	1	—	51	79	7,697	
Total Foreign	872	7	509	370	18	54	7	14	1	6	34	2	4	7	2	5	1	1	157	77	3	3	1	738	724	31,318
Grand Total	1171	187	983	375	26	71	8	17	2	8	41	3	7	11	2	5	1	1	204	99	6	4	1	789	803	39,015



1922.

TABLE B.

Class of Vessels.	Number Inspected.	Number Defects.	No. of Notices Issued.	Per-cent age Defective.
From Foreign ...	879	83	83	.94
From Coastwise	479	22	22	.45
	1358	105	105	.77
British Steamers	803	75	75	.93
,, Sailers	180	13	13	.72
	983	88	88	.89
Foreign Steamers	368	17	17	.46
,, Sailers	7	—	—	—
	375	17	17	.45

TABLE C.

List of Chief Foreign Ports from which Ships have arrived and have been inspected.

Name of Port or District.	No. of Vessels.	Name of Port or District.	No. of Vessels.
French ...	... 70	Brought forward	511
Dutch and Belgian ...	100	Newport News and	
Norwegian, Swedish and Danish ...	55	Norfolk, Va. ...	23
Russian and Finnish ...	17	New Orleans and Gulf of Mexico ...	53
Spanish and Portuguese ...	93	Jamaica, Port Limon and West Indies ...	54
German ...	43	Philadelphia, Savannah, Boston and Baltimore	39
Italian ...	11	Cuba	1
Greek ...	4	New York and Portland (Me.) ...	68
Alexandria and Malta	15	Canadian Ports ...	70
Persian Gulf ...	17	River Plate, Bahia	
North African ...	3	Blanco and Rio de Janeiro	39
South ...	2	Manchuria	3
West ...	9	Rumanian	12
Canary Isles ...	1	Turkey in Asia	2
East Indies, West Indies, Java and Singapore	7	Trinidad	3
Bombay, Calcutta and Rangoon ...	13	Tela, Honduras	1
Australia and New Zealand ...	32		
San Francisco and Portland (Oregon)	19		
Carried forward	... 511	Total	... 879

		1922.
No. of these defects which consisted of non-attention to general cleaning and washing operations	...	158
Total of Ships inspected after arrival in the various Docks	...	1,358
Total No. of various defects found in ships inspected		204
No. of ships in which these defects occurred	...	110
No. of ships in which fumigation was carried out at request of owners, certificates given by Port M.O.H.	...	22
Total No. of dirty or infected beds destroyed	...	2,022
Special Rat Precautions on ships from Plague-infected Ports	...	47
No. of special visits made to ships from "suspected" Ports	...	342

The Port Sanitary Inspector and Assistant Inspectors have discharged their duties with zeal and thoroughness.

I beg to acknowledge the assistance and information received from the Port Sanitary Officers of Cardiff, Newport, Barry and Swansea, in following up ships on which requirements had been made.

J. A. ROBINSON,

Chief Port Sanitary Inspector.

D. S. DAVIES, M.D.,

Port Medical Officer of Health.

ANNUAL REPORT OF CANAL BOAT INSPECTION FOR THE YEAR 1922.

I beg to submit a Report in accordance with the requirements of Section 3 of the Canal Boats Act, as to the work done in carrying out the Regulations during the year 1922, with a summary of the contraventions and defects found in the canal boats examined.

1. The duties have been discharged by the Chief Port Sanitary Inspector and an Assistant Inspector, in conjunction with ship inspection work.
2. The number of inspections made was 31. Canal boat traffic has increased during the year, but the increase is confined to four boats which are used regularly. The custom of carrying women and children has practically died out in this district.
3. *Particulars of Inspection.*
 - (a) **Registration.**—All boats have been registered at some time.
 - (b) **Notification of Change of Masters.**— This Authority is not a Registration Authority, consequently no notifications were received.
 - (c) **Certificates.**—Certificates were produced when required.
 - (d) **Marking.**—All boats inspected were properly marked.
 - (e) **Overcrowding.**—None was discovered or reported.
 - (f) **Separation of Sexes.**—No infringement was found.
 - (g) **Cleanliness.**—Cabins were kept fairly clean.
 - (h) **Ventilation.**—The regulation openings were available in all cases.
 - (i) **Painting of Cabin Interiors.**—No infringement was found.
 - (j) **Provision of Water Casks.**—No contravention of the Regulations was found. Two and four gallon stoneware jars are preferred in this district.
 - (k) **Removal of Bilge Water.**—No excessive accumulations were noted.
 - (l) **Notification of Infectious Disease.**—No cases were found or reported.
 - (m) **Refusal to Admit.**—None.
 - (n) **Dilapidation, etc.**—No infringement was found.
4. No legal proceedings have been required.
5. No notices were served.
6. Any cases arising of an infectious nature would be dealt with and isolated by the Port Sanitary Committee.
7. No detention of boats was required.
8. No register kept.
9. One steam-propelled boat only working in this district.

J. A. ROBINSON,
*Chief Port Sanitary Inspector
and Inspector of Canal Boats.*

D. S. DAVIES, M.D.,
Port Medical Officer of Health.

• PORT OF BRISTOL.

PUBLIC HEALTH (REGULATIONS AS TO FOOD)
ACT, 1907.UNSOOUND FOOD AND FOREIGN MEAT REGU-
LATIONS, 1908.FOREIGN MEAT REGULATIONS (AMENDMENT),
1909.

TABLE I.

Amount of Food examined during 1922.

1. Fresh or Frozen Beef, etc.

Frozen beef	...	...	5,589	quarters.
„ mutton	...	...	41,453	carcasses.
„ lamb	...	...	85,789	„
„ pork	...	...	1,462	„
„ pork sides	...	...	852	bales.
„ beef ribs	...	...	110	crates.
„ rabbits	...	...	500	„

2. Cured or Salted Beef and Pork (including Bacon and Hams.)

Bacon and Hams	...	...	26,307	cases.
Bacon	...	...	933	bales.
„	...	...	324	baskets.
Mess beef	...	...	100	tierces.
„	...	...	15	barrels.
Mess pork	...	...	250	barrels.
Hog Casings	...	...	8	barrels.
„	...	...	11	kegs.
„	...	...	222	cases.

3. Canned Meats, Fish, Fruits, Milk, etc,

Canned beef	...	...	912	cases.
„ loaf	...	...	1,000	cases.
„ ox tongues	...	...	903	cases.
„ sheep	...	...	2,413	„
„ pork	...	...	6,125	„
„ stewed kidneys	...	...	150	„
„ lobster	...	...	150	„
„ salmon	...	...	8,725	„
„ apples	...	...	3,600	„
„ apricots	...	...	47,297	„
„ apricot pulp	...	...	560	„
„ asparagus	...	...	25	„
„ fruit salad	...	...	4,390	„
„ grapes	...	...	25	„
„ loganberries	...	...	250	„
„ cherries	...	...	128	„
„ peaches	...	...	52,368	„
„ pears	...	...	62,073	„
„ pines	...	...	14,883	„

Canned plums ...	...	1,285	cases.
„ raspberries	...	2,825	„
„ tomatoes	...	12,674	„
„ strawberries	...	119	„
„ condensed milk	...	34,182	„
„ „ „	...	540	barrels.
„ evaporated milk	...	6,800	cases.
„ dried milk	...	94	cases.

4. Fresh and Dried Fruits and Vegetables, etc.

Bananas	...	3,888,075	bunches.
Oranges	...	327,139	cases.
Mandarins	...	7,784	„
Apples	...	30,112	barrels.
Apples	...	28,135	cases.
Onions	...	60,022	„
Onions	...	12,630	bags.
Grapes	...	30,642	barrels.
Lemons	...	36,294	cases.
Melons	...	4,142	„
Pomegranates	...	3,671	„
Cokernuts	...	3,572	bags.
Chestnuts	...	209	„
Barcelona nuts	...	4,292	„
Gooseberries	...	160	„
Figs	...	1,893	packages.
Currants	...	95	cases.
Sultanas	...	64	„
Raisins	...	136	„
Potatoes	...	6,285	bags.
Parsnips	...	771	„
Cabbages	...	115	„
Cauliflowers in brine	...	416	barrels.
Onions in brine	...	87	„
Gherkins in brine	...	155	„
Lemon Peel	...	524	pipes.
Orange peel	...	15	„
Citron	...	15	„
Strawberries in pulp	...	328	barrels.
Raspberries	„	121	„
Gooseberries	„	28	„
Black currants	„	78	„
Blackberries	„	5	„

5. Other Foodstuffs.

Wheat	...	3,624	bushels.
Cheese	...	6,415	crates.
Eggs	...	1,700	cases.
Lard	...	14	„
Rolled oats	...	4	„
Flour	...	86	bags.

TABLE II.

Amount of Food found Unsound which was destroyed or otherwise dealt with so as not to be used for human food.

1. Fresh or Frozen Beef, etc.

			tons.	cwts.	qrs.	lbs.
Frozen beef	-	2 quarters	...	2	1	19
"	"	- trimmings				
" "	from 548 qrs.	...	4	3	10	
"	mutton	- 33 carcases	...	8	2	17
"	"	- trimmings				
" "	from 98 carcases	...	1	2	25	

2. Cured or Salted Beef & Pork.

Mess beef	-	6 casks	...	11	1	24
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3. Canned Meat, Fish, Fruits, Milk, etc.

Canned Beef	-	53 tins	...	1	1	18
"	tongues	4 "	...			10
"	apricots	27 "	...		2	13
"	apricots (pulp)	165 tins		16	1	5
"	pears	- 5 tins	...			12
"	peaches	22 "	...		2	24
"	pines	- 328 "	...	6	1	11
"	tomatoes	696 "	...	15	2	4
"	fruit salad	8 "	...			20
"	salmon	- 53 "	...		1	25

4. Fresh and Dried Fruit and Vegetables, etc.

Oranges	-	116 cases	...	5	16	
Apples	-	123 barrels	...	7	13	3
Parsnips	-	226 bags	...	11	6	
Onions	-	60 "	...	3		
Cokernuts	-	152 "	...	7	12	
Chestnuts	-	209 "	...	10	9	
"	currants	...	...		1	0
"	sultanas	...	...		3	3
"	raisins	...	...		2	8
"	Gherkins in brine, 2 barrels	...		6		
"	Cauliflowers in brine, 2 barrels	...		6		

5. Other Foods.

Wheat	...	...	...	163	1	1	12
Flour	...	-	86 bags	...	5	7	2
Sugar	-	44	"	3	19		4
Lard	-	14	cases	...		7	
Rolled oats	-	4	bags	...		4	
Cheese	-	11	crates	...		7	19

Samples of Foodstuffs submitted to Analyst.

1. Sugar damaged by sulphur.
Result—Traces of sulphur negligible.
2. Three samples—Strawberry pulp.
Result—Estimation of sulphites expressed as S.O.₂

1	2	3
—	—	—
.07	.09	.09
3. Samples of Cheese (two).
Result—Beyond slight excesses in acidity no evidence of abnormality in samples.

J. A. ROBINSON,
Port Inspector of Foods.

D. S. DAVIES, M.D.,
Port Medical Officer of Health.

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